BARRE OAKHAM

BROOKFIELD RUTLAND

EAST BROOKFIELD PRINCETON

HARDWICK WARREN

NEW BRAINTREE WEST BROOKFIELD

NORTH BROOKFIELD

**CMRPC**
Central Massachusetts Regional Planning Commission

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# Rural-11 Prioritization Project

**2013**

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## Acknowledgements

### *PHOTOS*
Unless otherwise noted photos were taken by Janet Pierce, Trish Settles, or other CMRPC Staff.

## Executive Summary

The Rural-11 Prioritization Project is a regional-level planning process that:

1. Establishes community-based priorities and strategies in the study area;

2. Integrates those priorities into regional development and preservation strategies; and

3. Provides a direction for public investments that conserve the intrinsic qualities of the region while capitalizing on its economic strength in the state.

The Rural-11 Region is made up of the following communities:  Barre, Brookfield, East Brookfield, Hardwick, New Braintree, North Brookfield, Oakham, Princeton, Rutland, Warren, and West Brookfield.

The results of this regional planning process are lists and maps of local and regional priorities and strategies and actions regarding how to facilitate action on these:

- Priority Areas for Development
- Priority Areas for Preservation, and
- Priorities for Significant Infrastructure Investments.

In addition, this effort also developed an inventory of Working Landscapes in the 11 town region.

Priority Development Areas (PDAs) are areas within a town that have been identified as capable of supporting additional development or as candidates for redevelopment. These are areas on which a town is focusing its energy to promote thoughtful economic development that is closely tied to the community's goals.  Priority Preservation Areas (PPAs) are areas within a town that deserve special protection due to the presence of significant environmental factors and natural features, such as endangered species habitats or areas critical to drinking water supply, scenic vistas, areas important to a cultural landscape, or areas of historical significance.  Significant Infrastructure Investments (SIIs) are critical in supporting increased development of identified PDAs while respecting the need to protect PPAs. Working landscapes (WLs) are those operations that are typically described as farms, woodlots or affiliated businesses.

These priorities, and the local and regional discussions about the Rural-11 Region, have resulted in some broad recommendations and key findings, such as:

- The Rural-11 population is educated, though not more so than the state-wide average, getting older on average, and is becoming increasingly diverse ethnically and racially. Consequently, decisions made in the future ought to consider how to match proposed/anticipated

employment with the available and proximate labor force, housing preferences, and modes of travel.

- A fairly large number of jobs are located in the Rural-11 Region, but high housing costs account for more than 30% of workers' income and possibly prevent more workers from living closer to where they work. Decisions made in the future ought to consider how to match housing availability with employment and wage opportunity.

- Nearly half of the region's jobs are in only a few industry sectors, one of which pays slightly more and the others pay quite a bit less than the Region's average annual wage. This suggests the need for a broader jobs base in the future to keep pace with other costs and to help align work force wages with work force housing costs.

- Mass Audubon information indicates how vulnerable unpreserved open land is to new development, especially low density residential housing. This housing type consumes an inordinate amount of land per unit of housing while there are existing developed areas that are under-capacity or have the potential for redevelopment. Development decisions ought to consider opportunities to match targeted growth with preservation of vulnerable open spaces and habitat.

- Villages and town centers provide opportunities for housing and employment in areas with existing infrastructure and access to transportation corridors. Also because of the historical building and environmental patterns they represent, many of these centers may be considered priorities for development, as well as for preservation.

- Redevelopment and adaptive re-use projects fulfill the goals of sustainable development, but also help to bolster the history of this region.

- Commercial and industrial development and manufacturing are part of the foundation of the Massachusetts economy. Development areas that focused on industrial and commercial development to provide employment to the region's residents were a key part of the list of regional priorities.

- State highway intersections are important transportation assets intended to provide access to and from strategic "jumping off points" around the region. It is essential to protect their condition and capacity. Backups at the Turnpike toll plazas deter visitors to Central Massachusetts and the Rural-11 Region. Traffic congestion is created on the local roadways far beyond Sturbridge and Auburn and as a consequence affects local road conditions and thereby

the local economy.

- Collectively, farmland and working farms constitute an important component of the regional and statewide economy. Of the almost 700 working landscapes identified as part of this study, a closer look should be taken to prioritize and assess local and regional significance.

- For Preservation Areas, connectivity is essential.

- Multi-town regional trails, including the Mass Central Rail Trail, are critical pieces of the Rural-11 landscape, both from cultural/historical and transportation/recreation standpoints.

- Investments into water and sewer infrastructure will protect precious water resources and promote sustainable development. Information technology infrastructure will create access to markets, service and information resources that will promote economic opportunity. Energy distribution options (three [3] phase) can foster development of energy alternatives.

Water and wastewater infrastructure in the Rural-11 Region, key elements in promoting strategic economic development, are largely localized as opposed to being part of a regional or metropolitan system. Forecasted increases in water demand are likely to result in corresponding increases in wastewater demand should current wastewater management practices continue. Municipalities, in combination with private entities, are largely responsible for the construction of this infrastructure. Municipalities, the Region and the State should continue to think about how wastewater infrastructure should be planned, financed, and pursued over the next 20 years. These challenges present opportunities for new approaches and technologies through which Massachusetts can again provide leadership for others to emulate.

A gap of housing units is expected in the Rural-11 Region between 2010 and 2035. Six actions are recommended to reduce this projected housing gap:

1. Review the Priority Development Areas identified for commercial and industrial uses and explore their potential for housing.

2. Focus on the provision of residential land uses in village and town centers, where there is the potential to accommodate a greater number of units and housing types.

3. Diversify housing opportunities to create more residential options, reduce development pressure on Priority Protection Areas and facilitate land conservation.

4. Focus housing in development areas with good roadway, water, and sewer infrastructure.

5.  Explore zoning bylaw changes that might allow or encourage a greater diversity of housing types. For example accessory unit bylaws or village overlay districts might promote the development of upper level apartments.

6.  Adding resources to provide funding for housing rehab projects to sustain existing housing stock at an affordable rate.

While the Rural-11 Region started out as a study area, it became clear that existing relationships between people and their towns are a solid foundation upon which to build a set of shared regional goals and, ultimately, a Shared Regional Vision.  As part of this process, community leaders and state officials began to fully understand the common challenges and shared assets possessed by, not any one community, but the region as whole.  Prior to completion of the project, several proposals were already under development that built on the priorities identified here.  Communities have already identified specific proposals to address energy needs, develop information technology infrastructure, jointly look toward mill redevelopment solutions, and promote the region's agricultural tourism assets. Identifying these and other regional goals is a critical next step for community leaders, regional planners, and other state officials. Chapter 13 (p. 101) provides a summary of project findings and a conclusion.  This section identifies specific next steps including action prioritization and estimated start dates (see p. 113).  The table below highlights the Priority 1 actions recommended as immediate next steps.

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**Key Immediate Actions for Implementation**

1.  **Establish PDA Implementation Committee** (Action 2.2 - When: March 2014 and Ongoing); Who: CMRPC and PDA Committee)

2.  **Actively use prioritization lists** and plans to evaluate and plan for future investment in the community (Action 1.1 - When: January 2014 and Ongoing); Who: CMRPC and PDA Committee)

3.  **Filter Priority Development Areas** (Action 2.1 – When: January to March 2014; Who: State, CMRPC, Local PDA Subcommittee)

4.  **Use PDAs, PPAs, and PIIs as focus of programmatic efforts** (Action 2.3 - When: Ongoing); Who: CMRPC, Physical Development Committee, and PDA Committee)

5.  **Identify and seek implementation of best practices and programs for protection and support of agricultural landscapes and the rural agricultural economy** (Action 5.6 - When: January 2014 and Ongoing); Who: CMRPC and PDA Committee)

6.  **Initiate Subregional Agricultural Committee** (Action 5.8 - When: January 2014 and Ongoing); Who: CMRPC)

7.  **Partner with other RPAs regarding the Agricultural Economy** (Action 5.11 - When: Spring 2014 and Ongoing); Who: CMRPC)

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## 1. Introduction

We live in regions – areas defined by function, geography, culture, and natural resources.  Although we govern them through municipal and state jurisdictions, successful planning policy will address the regionalism of real life:  where we work, play, live, shop, and socialize.  Regional planning works with a fundamental understanding that, in order to meaningfully address local concerns, we must understand and act on them in a regional context. A regional plan, then, addresses issues across boundaries, in an area with shared characteristics and overlapping factors.  It relies on a collaborative approach.

The Rural-11 Prioritization Project is a regional-level planning process that:  1) establishes community-based priorities and strategies in the study area; 2) integrates those priorities into regional development and preservation strategies; and 3) provides a direction for public investments that conserve the intrinsic qualities of the region while capitalizing on its economic strength in the state.

This planning process promoted a dialogue about land use issues that transcend municipal boundaries. Local perspective was the first key step in identifying areas where growth and development should be emphasized ("locally identified priority development areas") and areas that should be preserved to protect natural resources and the character of each town ("locally identified priority preservation areas").  Meetings and conversations with municipal staff and stakeholders, in addition to large, regional forums, provided the foundation for these locally identified priority areas.

Using these local priorities as a basis, this report describes the methodology and findings of a planning process used to identify Regionally Significant Priority Development Areas, Priority Preservation Areas and Transportation and Infrastructure Investments.  Subsequently, the local and regional priorities will be used as a basis for identifying State Development and Preservation Priorities.

The Rural-11 study area is made up of the following towns:  Barre, Brookfield, East Brookfield, Hardwick, New Braintree, North Brookfield, Oakham, Princeton, Rutland, Warren, and West Brookfield (Figure 1).

The Rural-11 municipalities are located in the West and North Sub-regions in the Central Massachusetts Regional Planning Commission's (CMRPC) 40-community planning region.  Regional Planning Agencies (RPAs) are public organizations that encompass groupings of cities and towns and serve these municipalities by dealing with issues and needs that cross governmental and other boundaries through planning, policymaking and technical assistance.[1]

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[1] *For more information about RPAs: http://www.pvpc.org/resource_center/marpa.shtml*
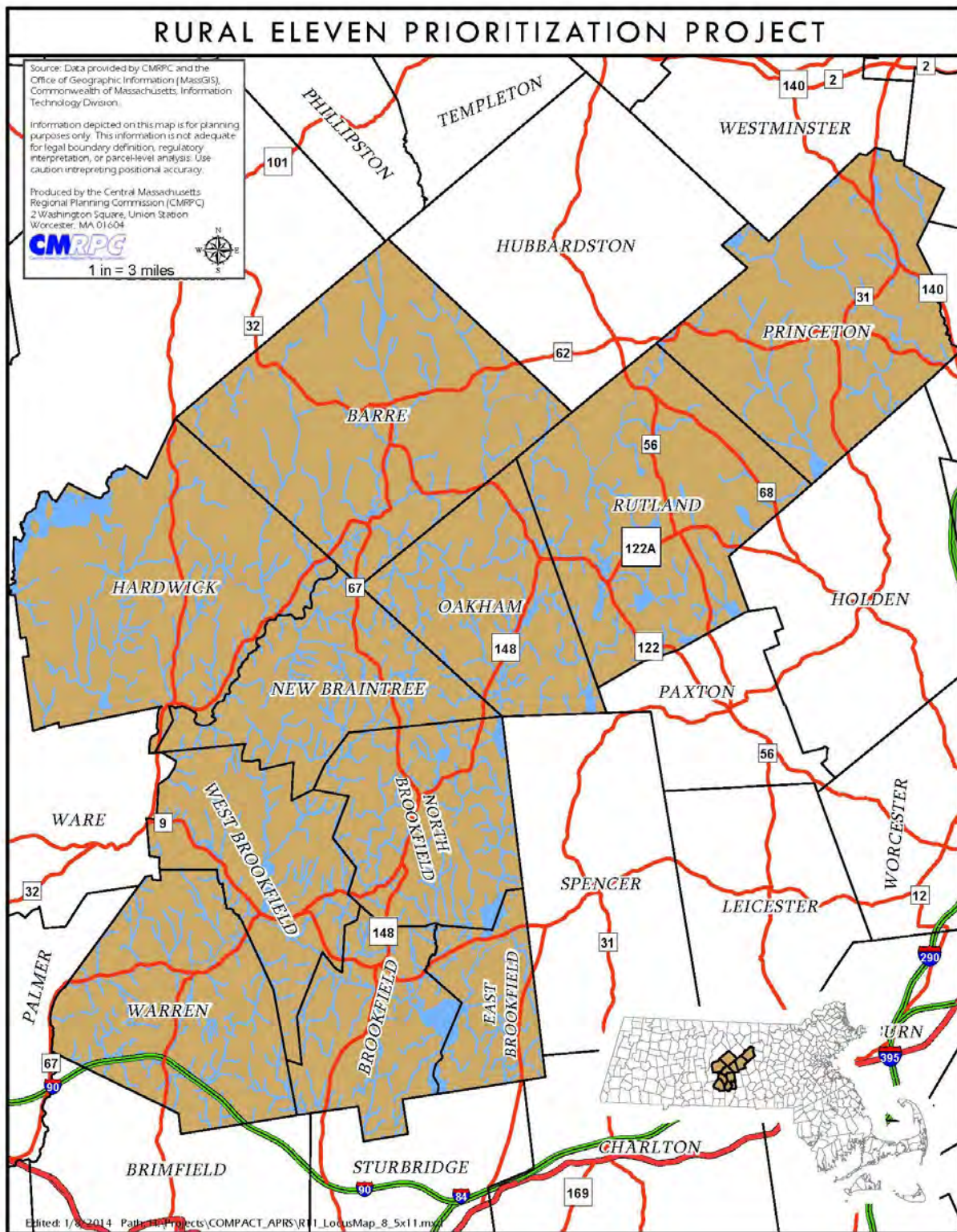
Figure 1 - Rural-11 Project Area

## 2.  Study Framework

The Patrick-Murray Administration, through the Executive Office of Housing and Economic Development (EOHED), in coordination with the Executive Office of Energy and Environmental Affairs (EOEEA) and the Massachusetts Department of Transportation (MassDOT), has been focusing in recent years on making economic development sustainable at a regional scale.

The planning process behind the Rural-11 Prioritization Project is modeled after other recent projects including:  the South Coast Rail Corridor Plan[2]; the 495/MetroWest Development Compact (the Compact, which included eight (8) CMRPC communities)[3]; plus two other projects in the CMRPC region - the Blackstone Valley Prioritization Process[4]; and the Central-13 Prioritization Process[5].  These efforts were similarly developed in collaboration with regional and local participants and included both public and private sectors to form the framework for decision-making in land use regulation and infrastructure investment in the region over the next 20 years.

The Rural-11 Region was defined largely because of each Town's similarities in size, location and rural/agricultural character. Over the past five to ten years, challenges with municipal budgets have led to an increase in inter-municipal collaborations to improve cost savings and efficiency.  Towns of the Rural-11 Region have explored and/or collaborated on shared public works resources and emergency dispatch.  Economic development and job creation in the region is challenging for a variety of reasons including highway access and water and sewer infrastructure that were identified in this project.  In order to promote increased job creation and economic development in a way that is consistent with the character of each of these communities, however, significant timely steps should be considered regionally.

Developed by the EOHED, the 495 Compact established a set of shared principles for state, regional and local strategies for the growth, development and land preservation efforts in the 37 cities and towns that comprised the 495 Compact Region. These fundamental principles have been carried through to the Rural-11 Prioritization Project as well.

The six (6) fundamental principles informing this framework are:

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2 http://www.southcoastrail.com/
3 http://www.mass.gov/hed/economic/eohed/pro/planning/metrowest/
4 http://www.cmrpc.org/bvpp
5 http://www.cmrpc.org/Central_PP

- Continued new growth will likely require major transportation and other infrastructure upgrades, beyond what is needed to keep existing systems in good repair.

- New commercial and residential growth must occur in a manner that is respectful of open space resources, transportation networks, and water resources in the region.

- Land use and transportation decisions must take into account the principles established by the Global Warming Solutions Act, the Clean Energy and Climate Plan, the transportation re-organization statute and GreenDOT Initiative.

- Workforce housing must continue to be produced and preserved within the region at a scale that allows the number of workers living in the region to keep pace with the number of new jobs created in the region.

- Sustainable new growth will involve the creation and maintenance of well planned-transportation networks and, where available, an effective public transit system that will coordinate with and build on existing transportation and, where available, transit systems.

- Coordinated planning and implementation efforts are necessary, particularly where jurisdictions and boundaries intersect.

These general principles served as the foundation for the planning and growth strategy, and preservation approach, utilized in this regional study. To advance this regional approach, a key aspect of this process was to build consensus with the broadest possible audience with these guiding principles, ultimately creating an appropriate framework for the project.

Not all principles apply to all communities with the same magnitude. These principles will inform, not govern, policies and actions developed by this project. Ultimately the unique characteristics of the region and any given community will suggest policies, actions and strategies. Some policies and goals may apply to only one community, while some may apply to several, and some may apply to all.

Because of the considerable amount of agriculture in the Rural-11 Region, community leaders and CMRPC planners chose to specifically highlight and focus on the agricultural economy of the region.
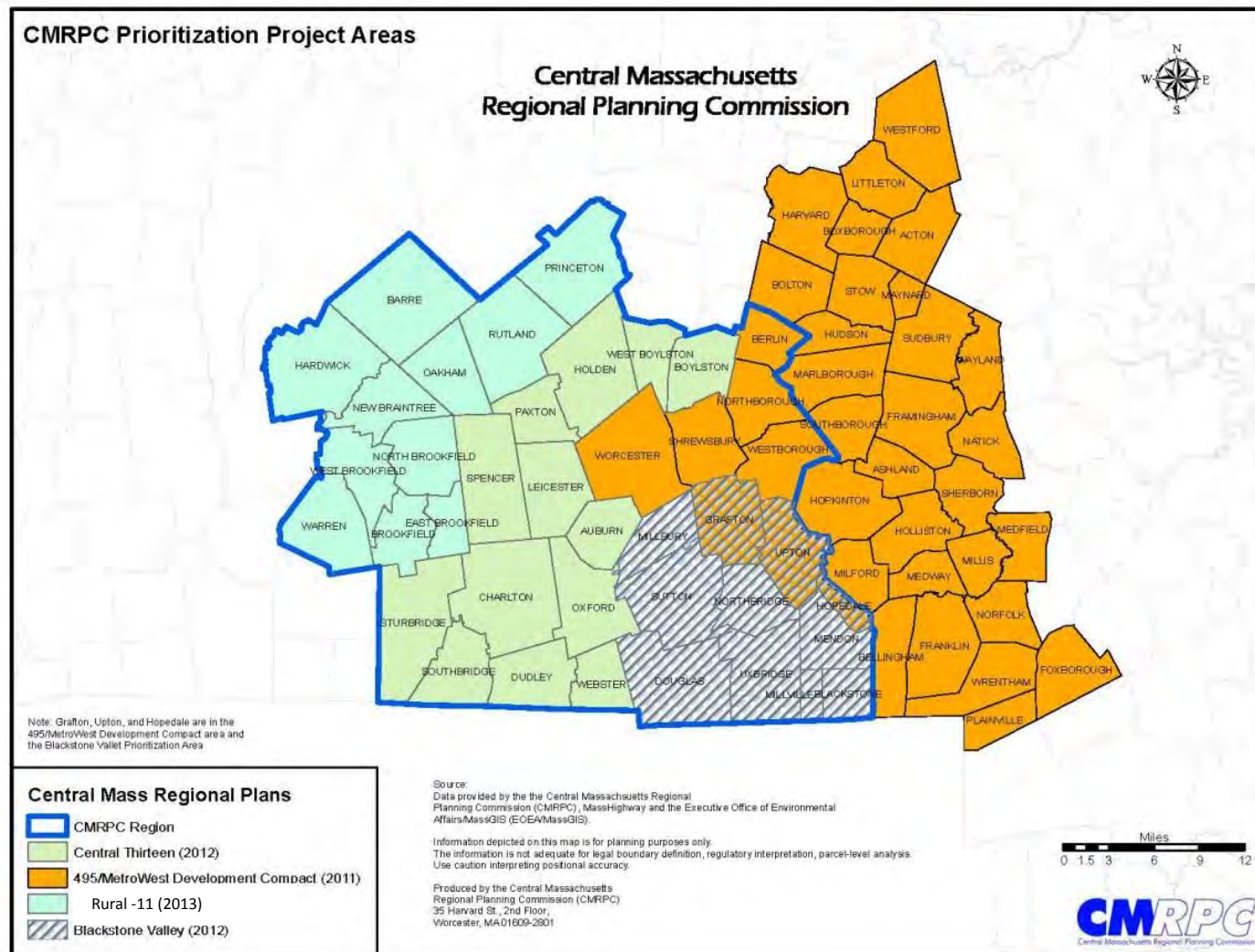
**Figure 2 - CMRPC Prioritization Project Areas**

## 3. The Rural-11 Region

When embarking on a community or regional planning process, we cannot reasonably consider the future or development of the "What IF" scenario until we first articulate "What IS". That is the role that data collection plays; it describes "What IS". It tells the story of what the community and region are, and how they have changed over time. This data allows us to establish trends and envision a "what if nothing changes" projection of our future.

Thus, armed with data, we can provide a picture of the reality of the region. Interestingly, this "reality" may or may not align with popular opinion. Some of the things the data tells us might be surprising or may not quite fit our expectations or may raise questions. These occurrences are precisely what can guide us in asking questions and will help us to begin to make the necessary changes. This data is analyzed while keeping the "Vision", the guiding principles described above, in mind. The data and the trends can help us establish benchmarks for measuring performance and implementation down the road, so that we stay on track to achieving the community's objectives as they align with the guiding principles.

What follows is the "story" of the Rural-11 Region.

### Community Characteristics

Communities may distinguish themselves from each other in a variety of ways. For example, some communities are long-established with relatively steady populations over the past several decades. Others have shown rapid growth in recent years, but are not considered "urbanized." And still others, of course, are rural.

The Metropolitan Area Planning Council (MAPC) has adopted a standard set of terms to describe certain community characteristics[6]. They include five (5) types of communities in Massachusetts:

1. Inner Core communities are high density inner cities and high density suburbs near the inner core. They have a mix of apartment buildings and multifamily homes with some single-family houses. They are essentially "built out" and new growth is predominantly redevelopment, infill, and conversion from industrial uses to residential. Finally, these communities have large minority and

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**6** *Community Types were defined for cities and towns in the state through MetroFuture:*
*http://www.mapc.org/sites/default/files/Massachusetts_Community_Types_-_July_2008.pdf*

immigrant populations and have stable populations with some population loss due to decreasing household size.  Examples of Inner Core communities are Cambridge, Newton, Brookline, and Somerville.

2. <u>Regional Urban Centers</u> are large, high-density communities not proximate to Boston with urban downtowns and diverse neighborhoods.  They are essentially built out, but may have some undeveloped land around the periphery.  New growth is predominantly redevelopment and infill, with some "greenfield" development at the periphery.  Examples of Regional Urban Centers are Worcester, Leominster, Milford, Marlborough, and Framingham.

3. <u>Maturing Suburbs</u> are moderately dense communities that are nearly built out or are approaching build out.  These are mid-century suburbs with owner-occupied single family homes on lots of less than one acre.  There is a limited amount of vacant land, and new growth is predominantly teardowns and redevelopment, and small-scale "greenfield" development.  Examples of Maturing Suburbs are Natick, Maynard, Ashland, and Acton.

4. <u>Developing Suburbs</u> are communities that have experienced high rates of growth over the past decade, primarily through large lot single-family homes.  They also tend to have large amounts of undeveloped and unprotected land that could be used for development. Some of these suburbs have strong mixed-use town centers, while others have town centers with historical and civic significance but little commercial or neighborhood value.   However, overall they have fairly low density development and the extent of economic development varies but is generally quite limited. Examples of Developing Suburbs are Shrewsbury, Auburn, Northborough, and Westborough.

5. <u>Rural Towns</u> are very low density communities with no significant town center and scattered "farmstead" settlements.  They have very few subdivisions and very limited economic development, with large amounts of vacant developable land.  New growth is typically limited to small amounts of scattered residential development.  Rural Towns have a population of less than 3,500 and are growing slowly. Examples of Rural Towns are Princeton, Hardwick, and Oakham.

These classifications help to inform the analysis of the region.

While every municipality is unique, the towns in the Rural-11 Region do share many common characteristics. The communities in the Rural-11 Region fall into two major community types: Rural Towns and Developing Suburbs.  These classifications help to inform the analysis of the region.

- Developing Suburbs are communities that have experienced high rates of growth over the past decade, primarily through large lot single-family homes.  They also tend to have large amounts of undeveloped and unprotected land that could be used for development. Some of these suburbs have strong mixed-use town centers, while others have town centers with historical and civic significance but little commercial or neighborhood value.   However, overall they have fairly low density development and the extent of economic development varies but is generally quite

limited.

➢ Maturing New England Town:  <u>Rutland, North Brookfield, Brookfield, and East Brookfield</u>.  A Maturing New England Town has a well-defined town center, mixed densities and room to grow. The mixed-use center is typically surrounded by compact neighborhoods.  Low density development makes up the outlying areas.  There is typically a large amount of vacant developable land.  New growth is mostly made up of conventional subdivision development on vacant land and population and household growth is rapid.

➢ Country Suburbs:  <u>Barre, West Brookfield, Warren</u>.  A Country Suburb has very low density, country/rural character, and has room to grow.  These communities typically do not have a large town center and no compact neighborhoods.   There is typically a large amount of vacant developable land.  New growth is mostly made up of conventional subdivision development on vacant land and population and household growth is rapid.

➢ Rural Towns:  <u>Hardwick, New Braintree, Princeton and Oakham</u>.  Though some communities experience growth spurts such as Oakham in the 1990's, most have small, scattered populations and have typically slow growth.  Very low density communities with no significant town center and scattered "farmstead" settlements; very few subdivisions; very limited economic development.  Very large amounts of vacant developable land (>40% of total town area is vacant & developable).  New growth: small amounts of scattered residential development (average below 15 acres/year).  Population generally less than 2,500 and growing slowly.

Some of the components of these sub-categories are described in greater detail in the following sections, including population characteristics, employment, and other data "stories".

## Population Characteristics

As shown in Figure 1, the study area covers 11 towns in the CMRPC planning region.  This region has a total population of almost 42,000[7].

Rutland has the largest population in the Rural-11 Region, comprising about 19%



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**7** *US Census, 2010.*
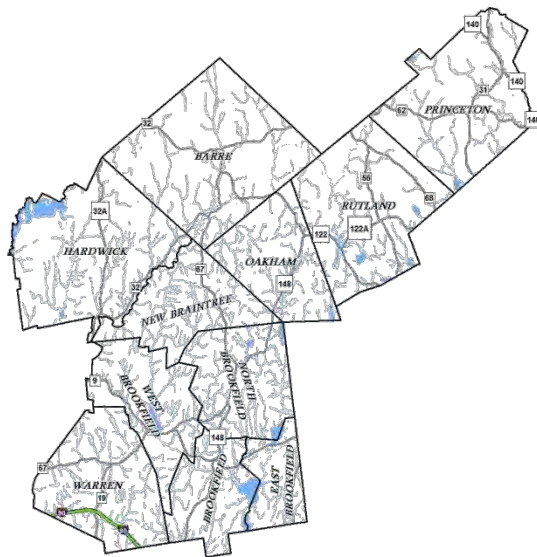
of the region's population.    Of the 11 communities, the four largest, Rutland, Barre, Warren, and North Brookfield make up nearly 56% of the region's total population.  Four communities, New Braintree, Oakham, Hardwick, and East Brookfield, have populations of fewer than 3,000 each. The smallest is New Braintree, with a population of 999.

The population of the Rural-11 Region grew by 7.9% between 2000 and 2010, compared to 3% for the state overall, gaining 3,044 new residents in that time period (Figure 3). The region has also grown somewhat more culturally and ethnically diverse in the past decade, with minority populations in each town growing from a region wide average of 2.1% in 2000 to 4.4% in 2010.  There is every indication that this growing diversity trend will continue both in the Rural-11 Region and statewide.  The statewide minority population grew by more than 5% between 2000 and 2010; in the Rural-11 Region, the increase was approximately 6.7%.
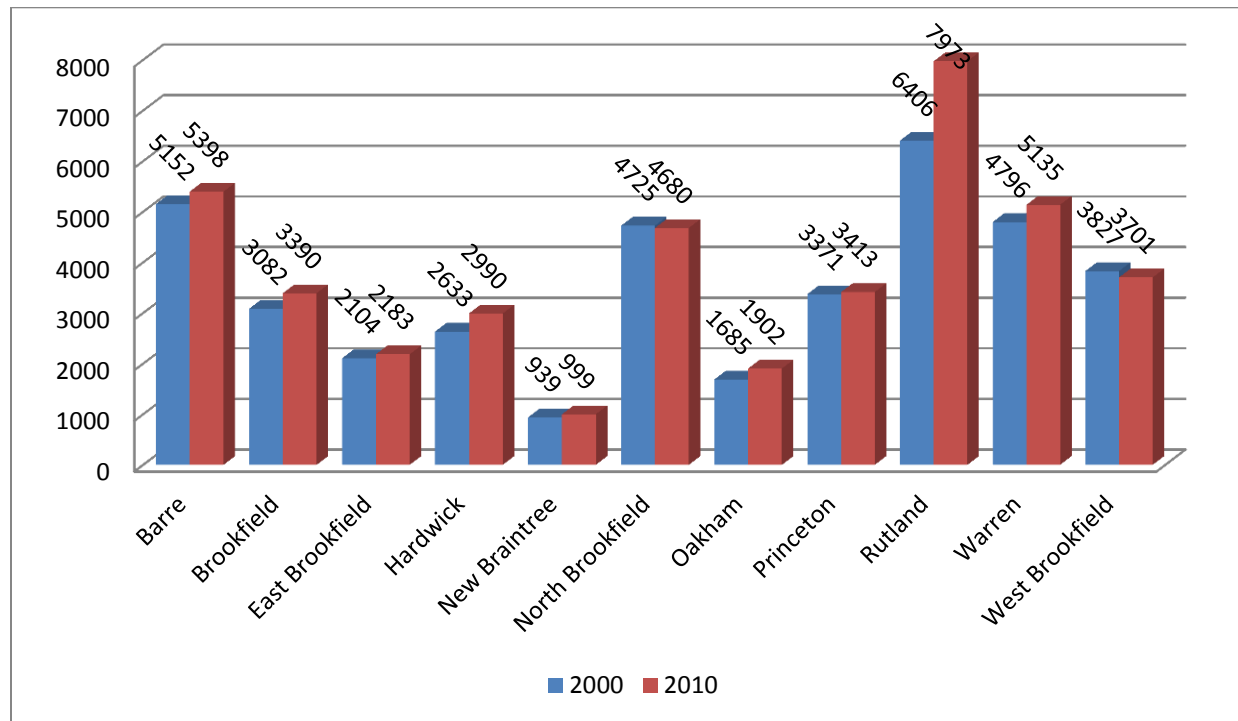


Figure 3 - Rural-11 Population Change, 2000 – 2010 (US Census Bureau)

Understanding the Region's demographic profile is critical to understanding and planning for our future economic profile because demographic trends drive our labor force. There is a slight trend in declining school-age children in the Region overall (Figure 4). The working age population (defined as ages 20 –

69) grew by 15.2% over the past decade, and the communities experienced a slight decrease in their population of people aged 70 and over as well – a decrease of nearly 5%.
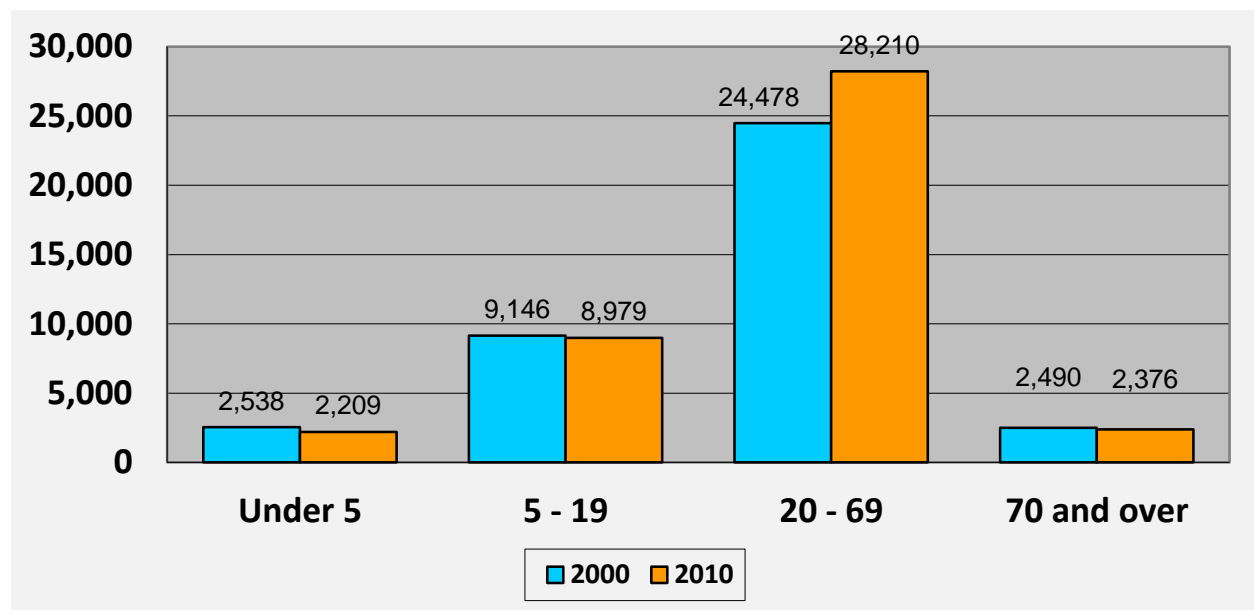


**Figure 4 - Rural-11 Population Age Cohorts (US Census Bureau, American Community Survey, 2006 – 2010)**

As Baby Boomers move into retirement age and leave the labor force, a shortage of workers may result. The Rural-11 Region's recent population growth and related increase in diversity will be important factors to consider as workers are needed to fill the gaps left in the labor force.

## Employment

There are 21,467 total jobs in the Rural-11 Region.  This is less than half the jobs in the Central 13 region (>52,000).  Over 50% of which (11,670) are located in four communities (Figure 5): Rutland, Barre, North Brookfield, and Warren.

| TOWN | Employment |
|------|-----------|
| BARRE | 2,811 |
| BROOKFIELD | 1,851 |
| EAST BROOKFIELD | 1,119 |
| HARDWICK | 1,392 |
| NEW BRAINTREE | 559 |
| NORTH BROOKFIELD | 2,469 |
| OAKHAM | 1,068 |
| PRINCETON | 1,974 |
| RUTLAND | 3,939 |
| WARREN | 2,451 |
| WEST BROOKFIELD | 1,834 |
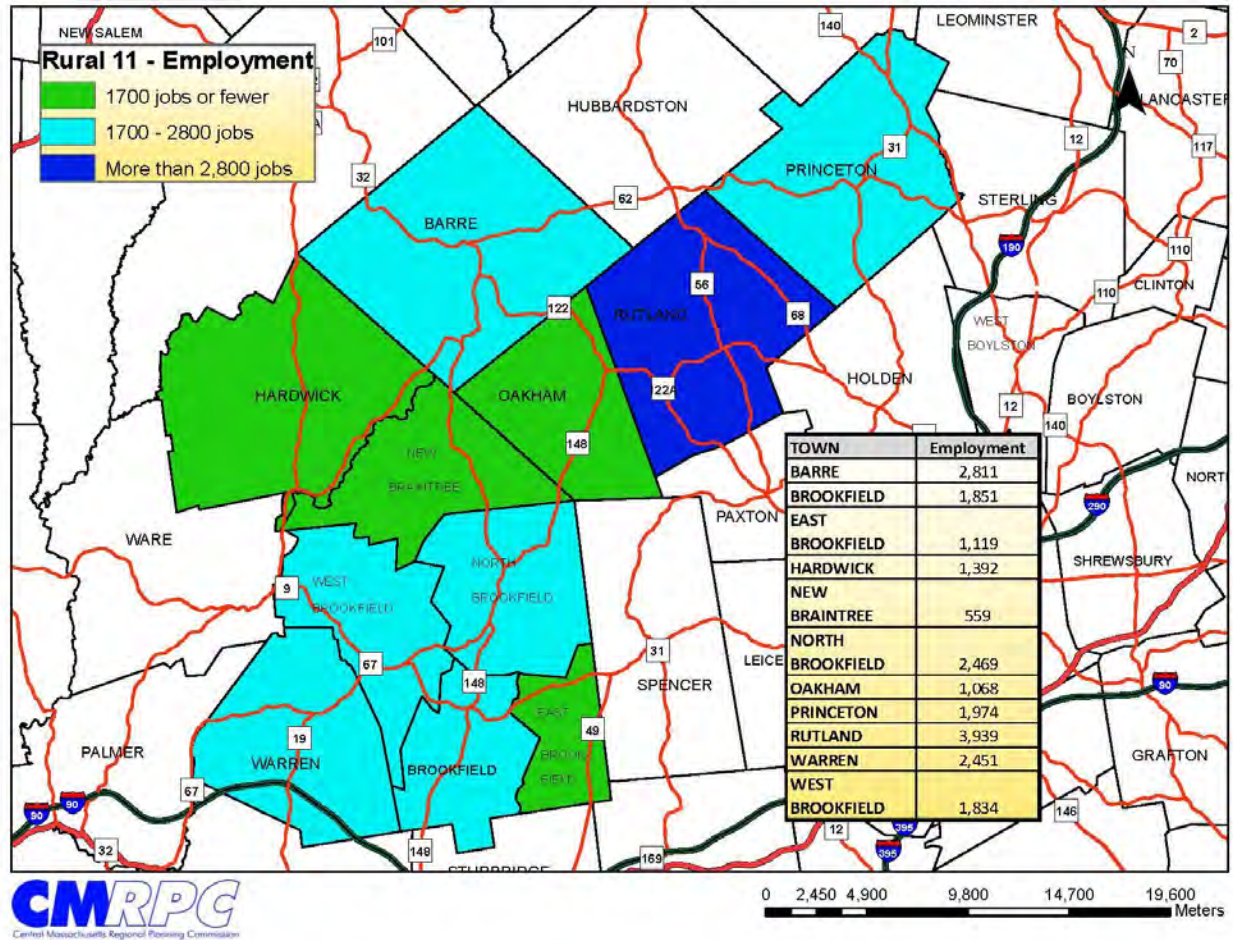
**Figure 5 - Total Employment by Community (MA Department of Transportation, 2011)**

The region has a diverse economy. The largest sector for employment in the region is Education and Health Care followed by Manufacturing. The 2010 US Census reports for the 11 town region 891 establishments employing 7,100 people with an average weekly wage of $660. The chart below also shows us the Average Annualized Weekly Wage by sector.  Note that Agriculture, Forestry and Fishing sector has the lowest average reported employment.  Anecdotal evidence suggests that there may be considerable under reporting in Agriculture, Forestry and Fishing sector as these are largely home-based businesses.
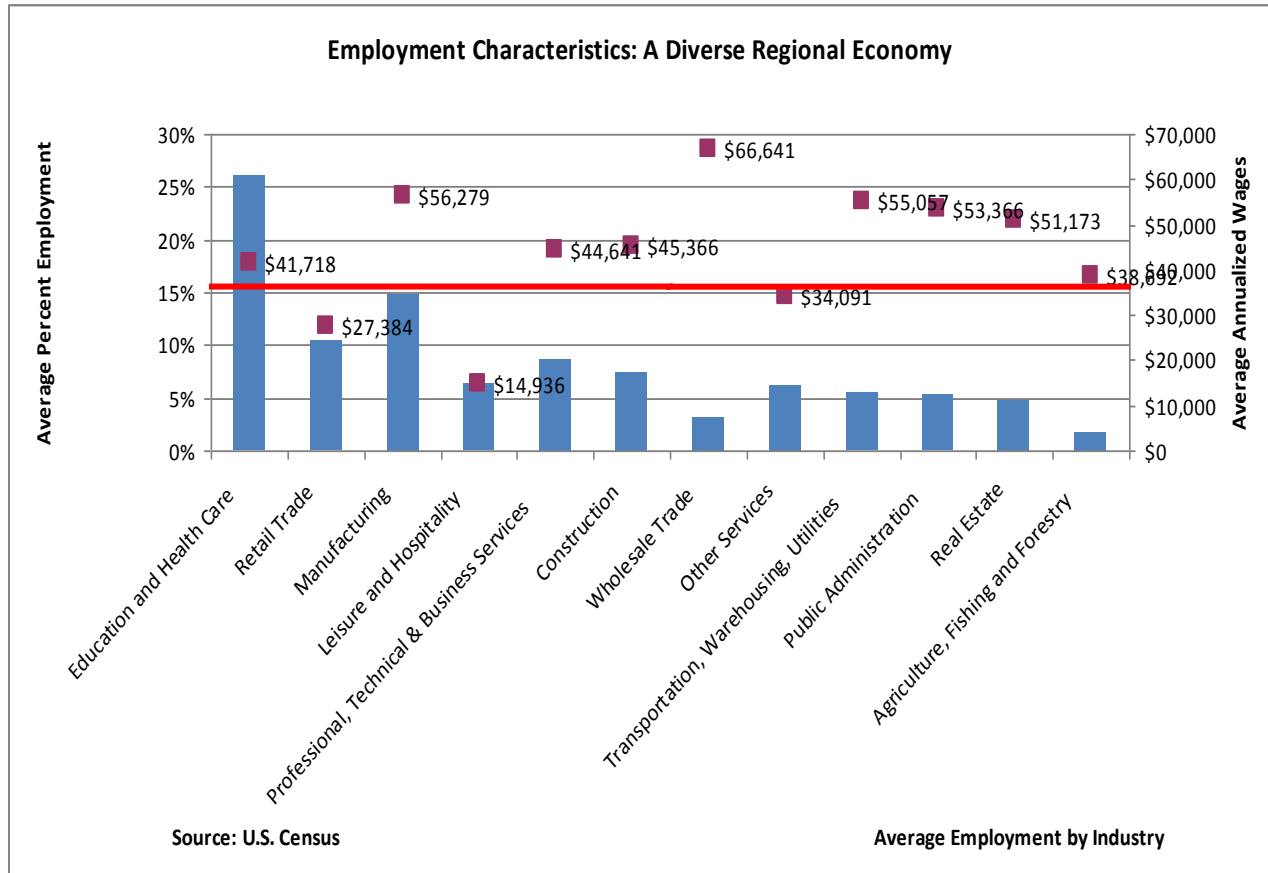
**Figure 6 - Employment Characteristics (Central Massachusetts Workforce Investment Board, 2010)**

It is important to note that the top three sectors for employment, Education and Health Services, Retail Trade, and Manufacturing comprise almost 50% of the total jobs, but only two of those sectors pay the region's average annual wage of $37,487.  Retail Trade, while the second largest employment sector, has an average annual wage of $27,384.  The highest wages are in Wholesale Trade; Manufacturing; Transportation, Warehousing, and Utilities; Public Administration; and Real Estate, with average annual wages of over $50,000 each.  These are important pieces of economic information to consider when looking ahead to the next 20 years since a region's sustainability is tied in large part to the adequacy of area wages. See Figure 5 for more employment and wage characteristics.

Another consideration in looking at a region's employment is the concept of the daytime versus nighttime populations.  The concept of the daytime population refers to the number of people who are present in an area during normal business hours, including workers. This is in contrast to the "resident" population present during the evening and nighttime hours. Analyzing these numbers can tell us whether or not a community is an importer or exporter of labor, or in other words, is a bedroom

community or employment center.  In the Rural-11 Region, every community has a higher night time population than day time population.  The communities of Rutland, Warren, Princeton and Brookfield have the greatest imbalances indicating that more residents of those town commute to jobs beyond their borders.   The map below also provides information on population densities by census tract.  The green and blue shades indicating areas, typically mill villages or town centers, where housing is densest, and the yellows, reds and browns in the more agricultural areas, state protected land holdings such as watershed management areas or state parks.
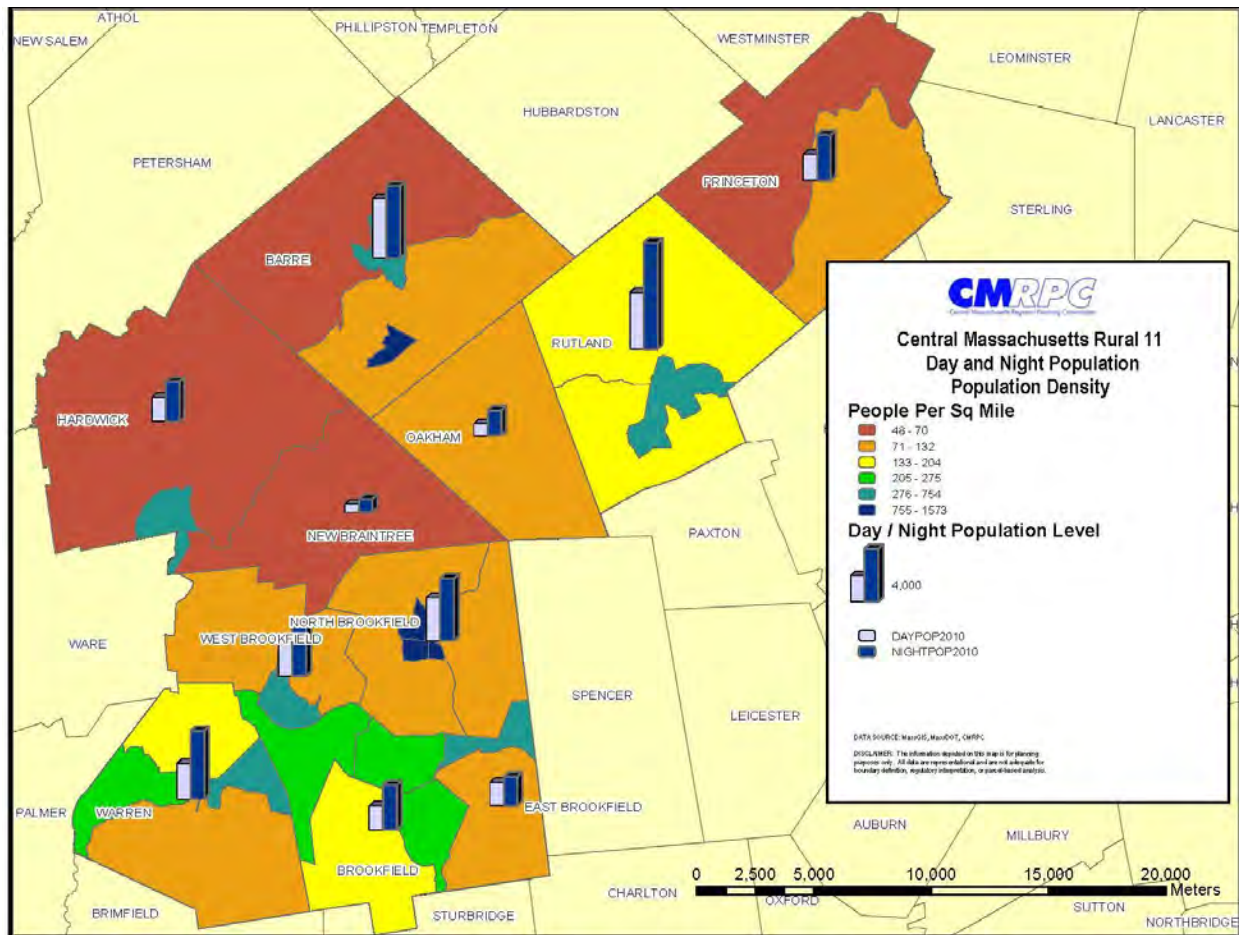


**Figure 7 -Rural -11 Day and Night Population**

This concept can be further analyzed by looking at the ratio between the workforce populations (ages 18-64) to the number of jobs in the region.  According to the American Planning Association, if a community/region is trying to match working residents with employment in the community/region, then a one-to-one (1:1) relationship is the ideal. A range of 0.8:1 – 1.25: 1 implies balance.  Ideally, the jobs available in a community or region should match the labor force skills, and housing should be

available at prices, sizes, and locations suited to workers who wish to live in the area.[8] In the Rural-11, there are 21,467 jobs for the 21,191 individuals in the workforce.  This ratio is 1.01:1 or approximately 1.01 jobs for every one (1) worker. While the region appears to be balanced with regards to workforce and jobs.  But  do we have the right types of jobs for the residents of these communities?  Are there adequate blue collar jobs and professional jobs for the work force?  Are there sufficient workers available to fill the skilled work force needs?

Another key in considering the dynamics of the labor market is educational attainment. The residents in the Rural-11 Region tend to have lower educational attainment then the state overall. 32% have a bachelor's degree or higher (the state's number is 39%); 34% are high school graduates or equivalent and less than 22% have less than a 9th grade education, compared with 12% statewide.
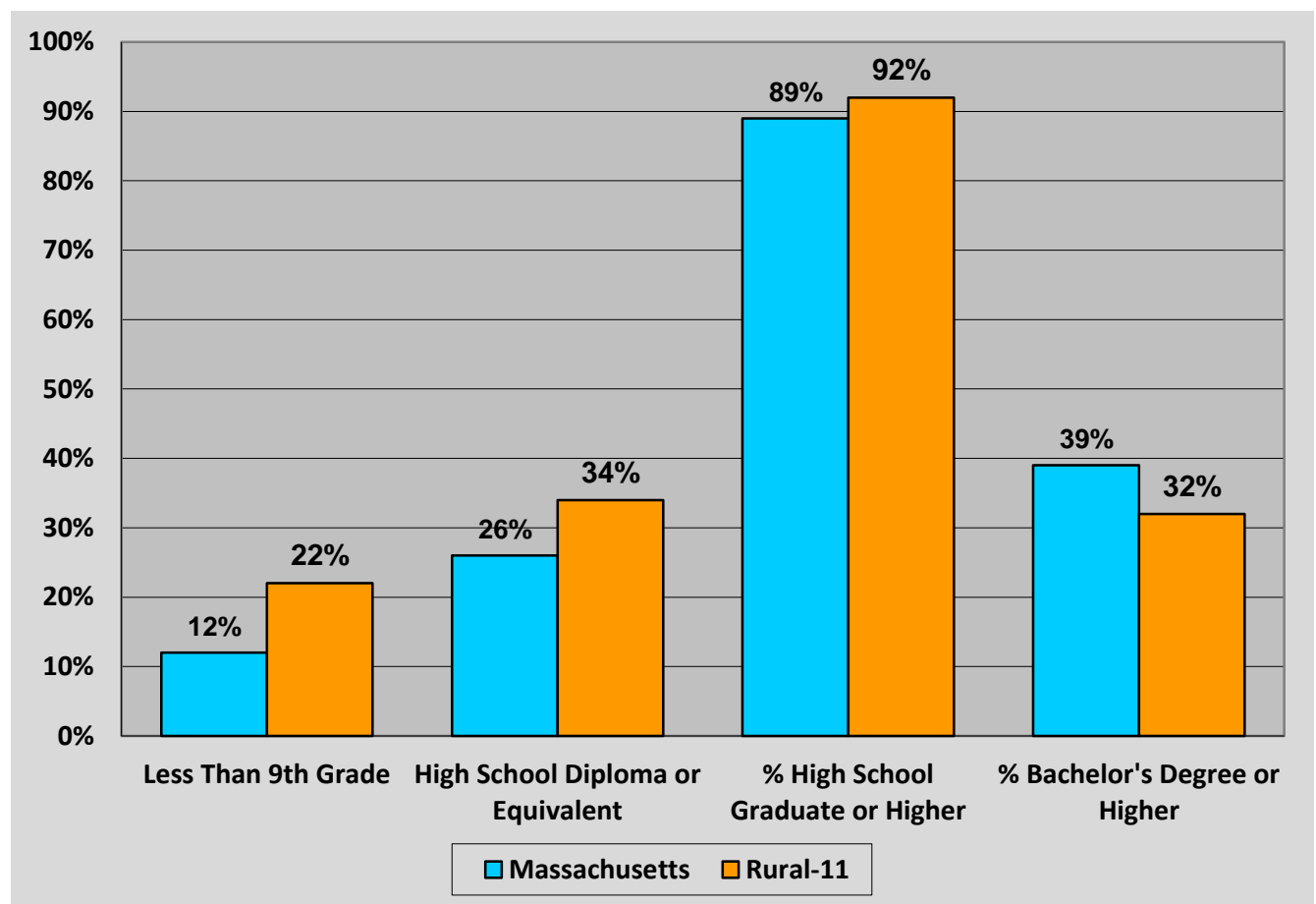


**Figure 8. Educational Attainment (Source: US Census Bureau, American Community Survey 2006 – 2010)**

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**8** *APA Planning Advisory Service Report No. 515, 2003.*

During this regional planning process, however, numerous participants expressed concern that workforce development efforts need to be better connected with the region's workforce and with employers in the region.   Retaining the region's students and connecting them with jobs in the region is crucial to the success of the region.  There was a particular concern about the need for agricultural education.  The state is home to only four high schools that offer specialized vocational training in agriculture – Bristol County Agricultural High School in Dighton, Essex Agricultural and Technical Regional High School in Danvers, Smith Vocational and Agricultural High School in Northampton, and Norfolk County Agricultural High School in Walpole.

High Schools in the Rural-11 Region include: Eagle Hill School (private) in Hardwick; Stetson School (private) in Barre; Valley View School (private) in North Brookfield; North Brookfield High School; the Quabbin Regional High School in Barre; and Quaboag Regional High School in Warren.  Additionally, Tantasqua Regional High School in Sturbridge, David Prouty High School in Spencer, and Wachusett High School in Holden also serve students from the Rural-11 Region. Bay Path Regional Vocational Technical High School in Charlton serves students from North Brookfield and Rutland; Montachusett Regional Vocational Technical School in Fitchburg serves students from Barre and Princeton; and Pathfinder Regional Vocational Technical School serves students in Hardwick, Warren, and New Braintree.   There are no charter schools and no colleges or universities in the Rural-11 Region.

The employment data reveals that nearly one-half of the workers in the Region are employed in three sectors, Education and Health, Manufacturing, and Retail Trade, and that one of those sectors pays significantly less than the Region's average annual wage.  The top five wage earning sectors pay well over the average annualized wage, but the number of jobs in those sectors is only about 35% of the total jobs in the Region.

The data also shows that the educational attainment of residents of the region, though slightly less than that of the state, is consistent as a whole, and the population is increasingly diverse compared to the year 2000.  Matching the labor force and its skill level with employment in the face of changing demographics will likely be a challenge going forward.

## Housing

It is widely recognized that Massachusetts has one of the most expensive housing markets in the nation. According to a December 2, 2012 article on GoLocalWorcester.com, Massachusetts is the second most expensive state in which to buy a home.[9] This creates a challenge for meeting the housing needs of lower- to middle-income households in the Rural-11 Region and the rest of the CMRPC region. According to the US Department of Housing and Urban Development (HUD), a housing cost burden exists when a

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9 http://m.golocalworcester.com/business/ma-2nd-most-expensive-state-to-buy-a-home/

household pays greater than 30% of their gross household income on housing costs (mortgage/rent, insurance, taxes, and interest).
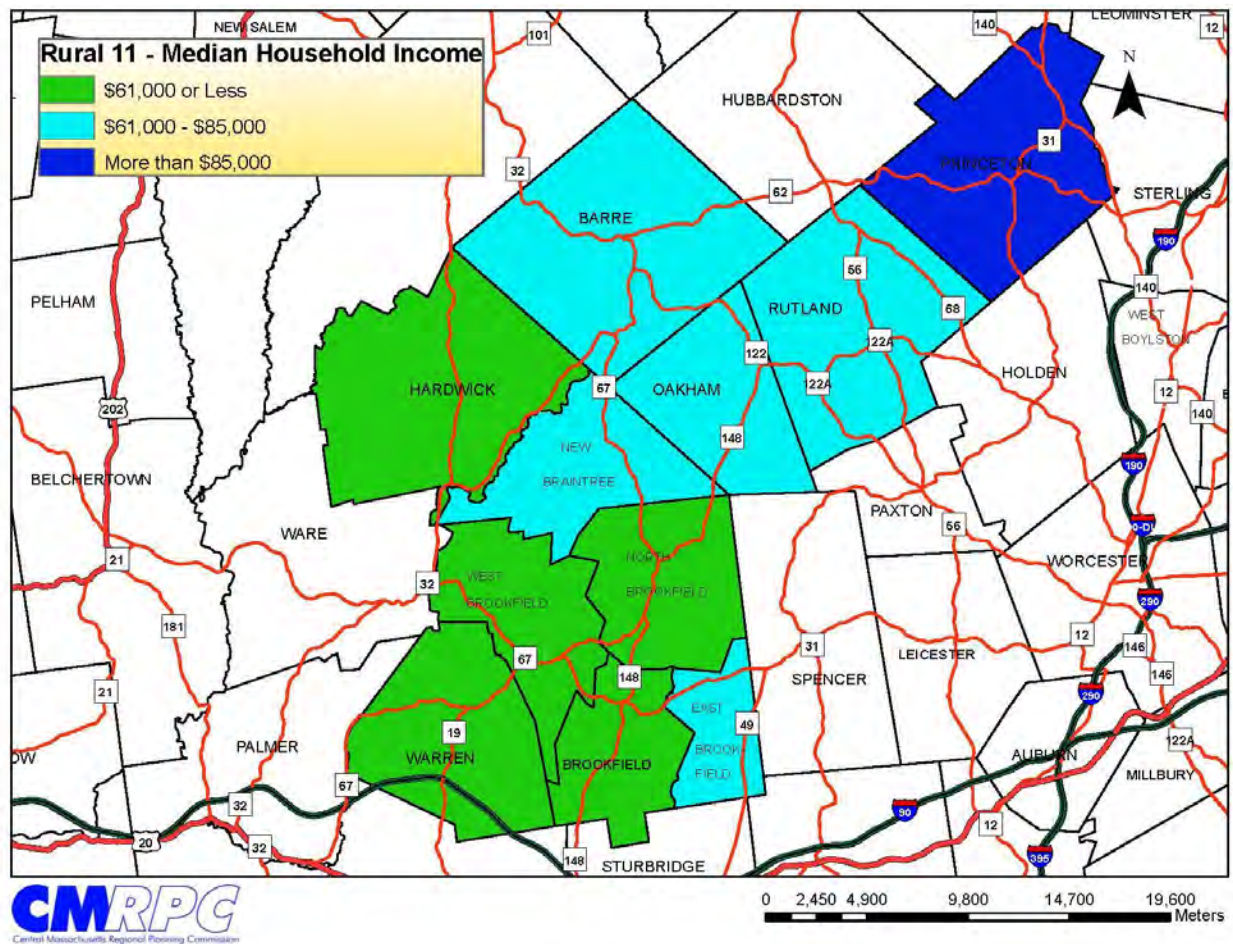


**Figure 9 -Rural-11 Median Household Income (US Census Bureau, 2010)**

Median family income is used as a way of defining income limits for various housing programs.  The median household income in the Rural-11 Region is approximately $71,000.  Not all communities share equally in the region's prosperity.  Warren has the lowest median family income at $55,030 and Princeton has the highest median family income at $102,853. Massachusetts aims to assist  households whose maximum income does not exceed 80% of the area median income, adjusted for household size, through M.G.L. Chapter 40B and other programs from the Department of Housing and Community Development (DHCD).  For example, an income eligible renter household's monthly housing costs (inclusive of utilities) cannot exceed 30% of monthly income for a household earning 80% of area median income, adjusted for household size. For a family of four, the income limit is $64,000.  In the case of homeownership, an income-eligible household's down payment must be at least 3% of the

purchase price, at least half of which must come from the buyer's funds and monthly housing costs (inclusive of principal, interest, property taxes, hazard insurance, private mortgage insurance and condominium or homeowner association fees) and cannot exceed 38% of monthly income for a household earning 80% of area median income, adjusted for household size. A cost burden is defined as households paying more than 30% of their gross household income on housing and a severe cost burden is when a household pays more than 50% of their gross household income on housing costs.

If we look at the Rural-11 Region, an average 34% of homeowners are paying more than 30% of their income towards housing costs. However, it is even more challenging for renters, where 37% are paying more than 30% of their income towards housing costs. Hardwick, Barre, Warren, and West Brookfield each have housing cost burdens for over 50% of their renters.  Housing cost burdens deter workers from moving to the region and may deter firms from locating here. More choice in housing type is one part of the solution to this challenge.
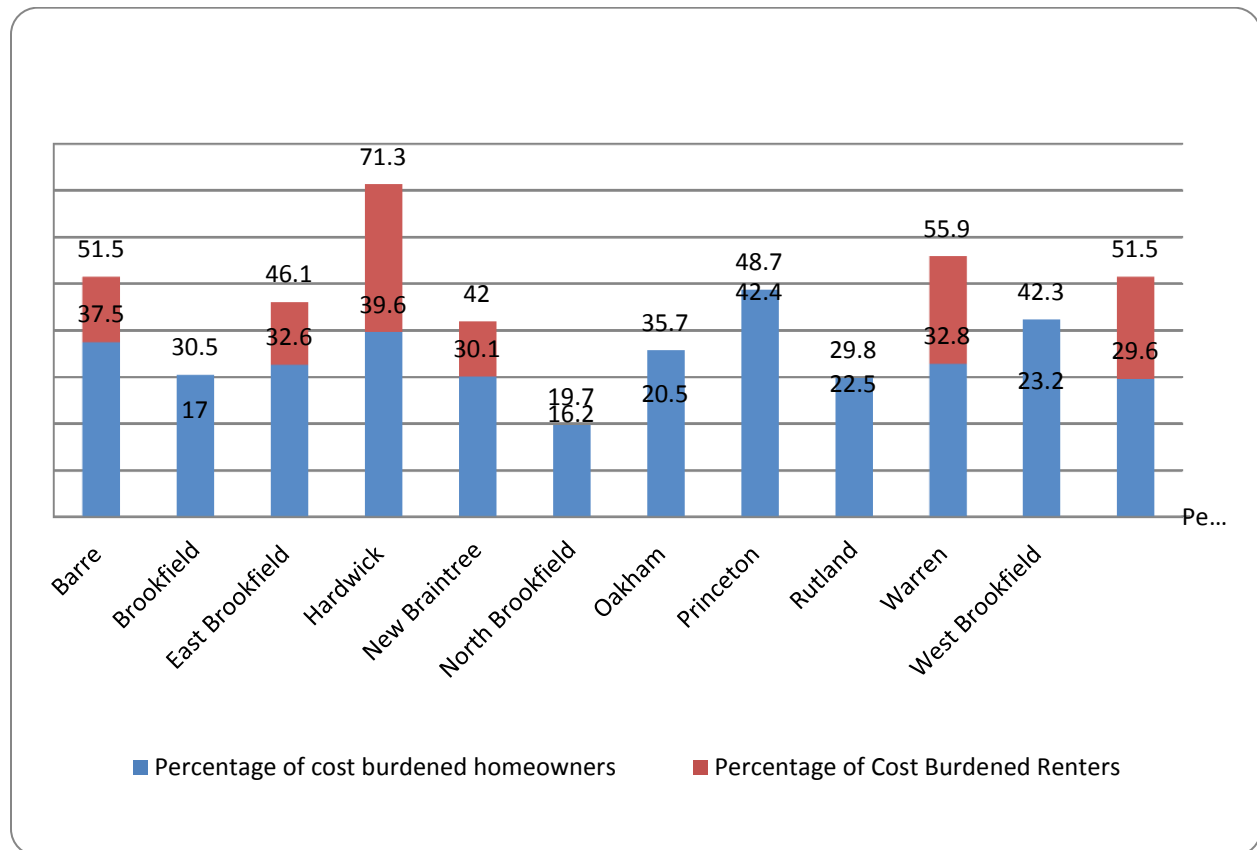


**Figure 10 - Housing Cost Burden (US Census Bureau, American Community Survey, 2006 – 2010)**

It is noteworthy that there is very limited housing diversity in the region (Figure 11). Approximately 80% of all housing units (15,665) are single-family homes. In some communities this number is as high at 90%, but we also see that in North Brookfield and Warren that number is 66% and 72% respectively. The limited housing choices available in the region are a critical part of the existing high housing cost burden. In the future, municipalities are encouraged to advance sustainable development principles by addressing the limited diversity in housing stock in the region through smart growth zoning, which supports diverse housing types and increased development densities in appropriate areas, so that consistent community character can be built.
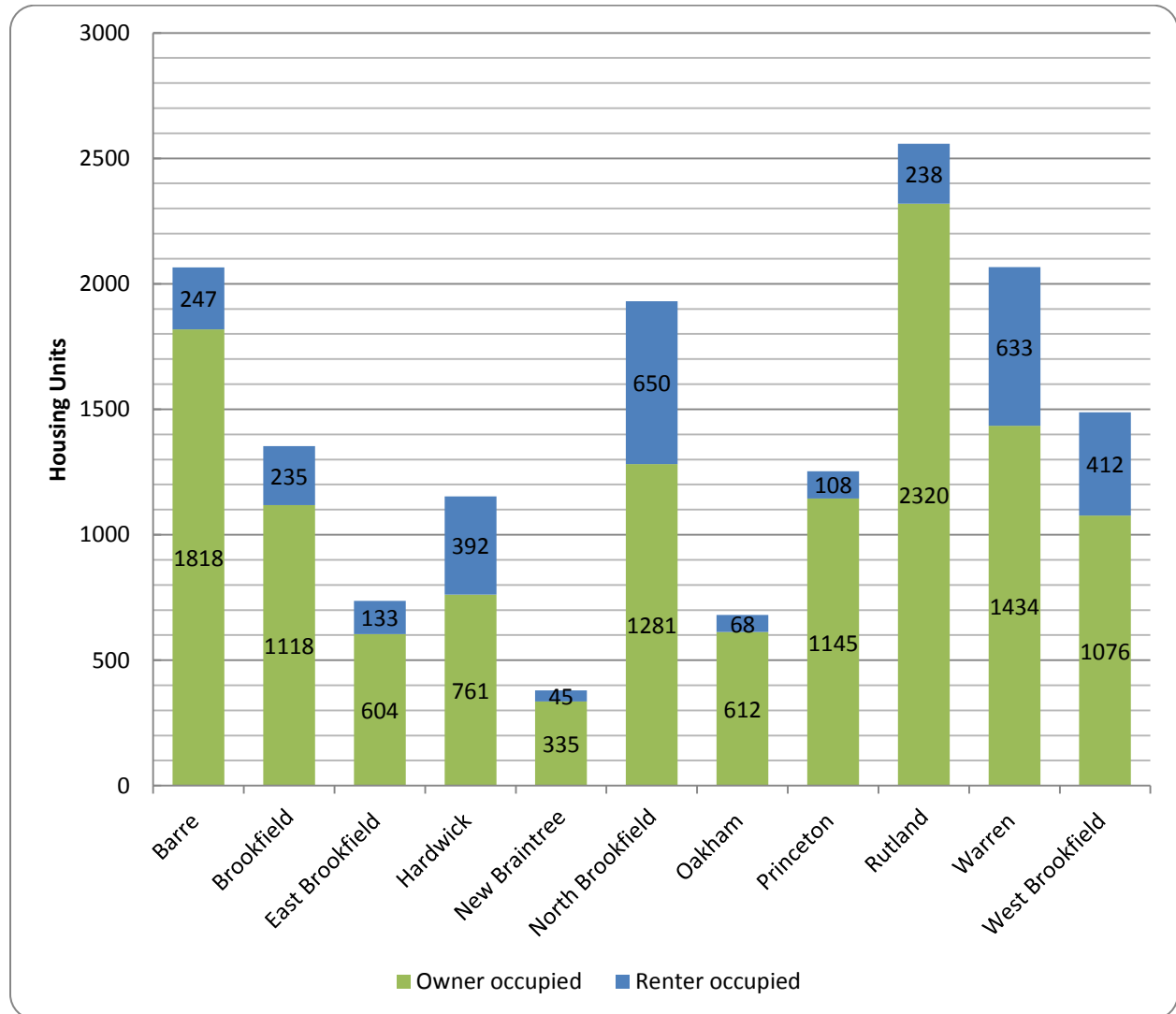


**Figure 11 - Housing Type (US Census Bureau, American Community Survey, 2006 – 2010)**

With an increasingly diverse population needing a broader range of housing options in a variety of locations, there is a distinct need to create more housing units throughout the Rural-11 Region that satisfies the required employment, desired housing types, and affordability needs. The combination of disproportionately high housing costs and lack of housing choices could potentially deter residents from staying in the region, workers from moving to the region, and firms from locating here in the future. It is critical to develop alternatives such as multifamily housing in transit accessible locations for a range of household types.

## Transportation

A consequence of limited housing choice is that it is more difficult for workers to live close to where they work. This is significant because it means that there is a mismatch between employment and housing; people cannot afford to live in the region in which they work. On average, residents in the Rural-11 Region commute approximately 32 minutes to work, five (5) minutes more than residents in the Central 13 region. Less than seven (7) minutes separates the longest and the shortest commute times. In 2010, over 43,825 daily vehicle trips (compared to 370,000 daily vehicle trips in the Central-13 region) begin and end in the region – nearly all of them in personal vehicles. This indicates that the transportation challenges have an emphasis on moving people within the Region, not just moving people in and out of the Region. This understanding helps to focus transportation planning within the Rural-11. It also provides the opportunity to reduce vehicle emissions, such as greenhouse gases and particulate matter, by limiting excess travel and increasing transportation choices on key commuter corridors in the Region. Additionally this suggests that the region seek opportunities to meet these challenges.

Several communities noted the lack of public transit in the region in their discussion of infrastructure priorities. All of the communities in the Rural-11, with the exception of Hardwick, are members of the Worcester Regional Transit Authority (WRTA). Currently, only East Brookfield and Brookfield have fixed route services. All of the WRTA member communities have Council on Aging or Elder bus services, and paratransit services.

Of course, not all trips are commute trips. While many daily vehicle trips are for employment purposes, the remaining travel is used for shopping, school, and other common household destinations. Residents in communities with fewer services must travel farther than those with more developed areas. In combination with longer commutes, this means that the average household in the Rural-11 Region is likely driving over one hour every day.

None of the Rural-11 communities have direct access to the region's major interstate highways, I-90, I-84, I-190, or Route 2.  Route 9 passes through West Brookfield, Brookfield, and East Brookfield and on to Worcester.  Route 122 passes through Barre, Oakham, and Rutland and on to Worcester. These two routes generally have the highest Vehicle Miles Traveled (VMT) in the region. The highest volumes are seen on Route 68 in Rutland, followed by sections of Route 122 in Rutland, Route 122A in Rutland, Route 148 in North Brookfield, and sections of Route 9 in West Brookfield, Brookfield, and East Brookfield.  In addition to these State roads, Routes 19, 31, 32, 32A, 49, 56, 62, 67, 68, 122A, 140, and 148 also intersect the region carrying motorists in and around the area.



Central Massachusetts Regional Traffic Flow - 2012
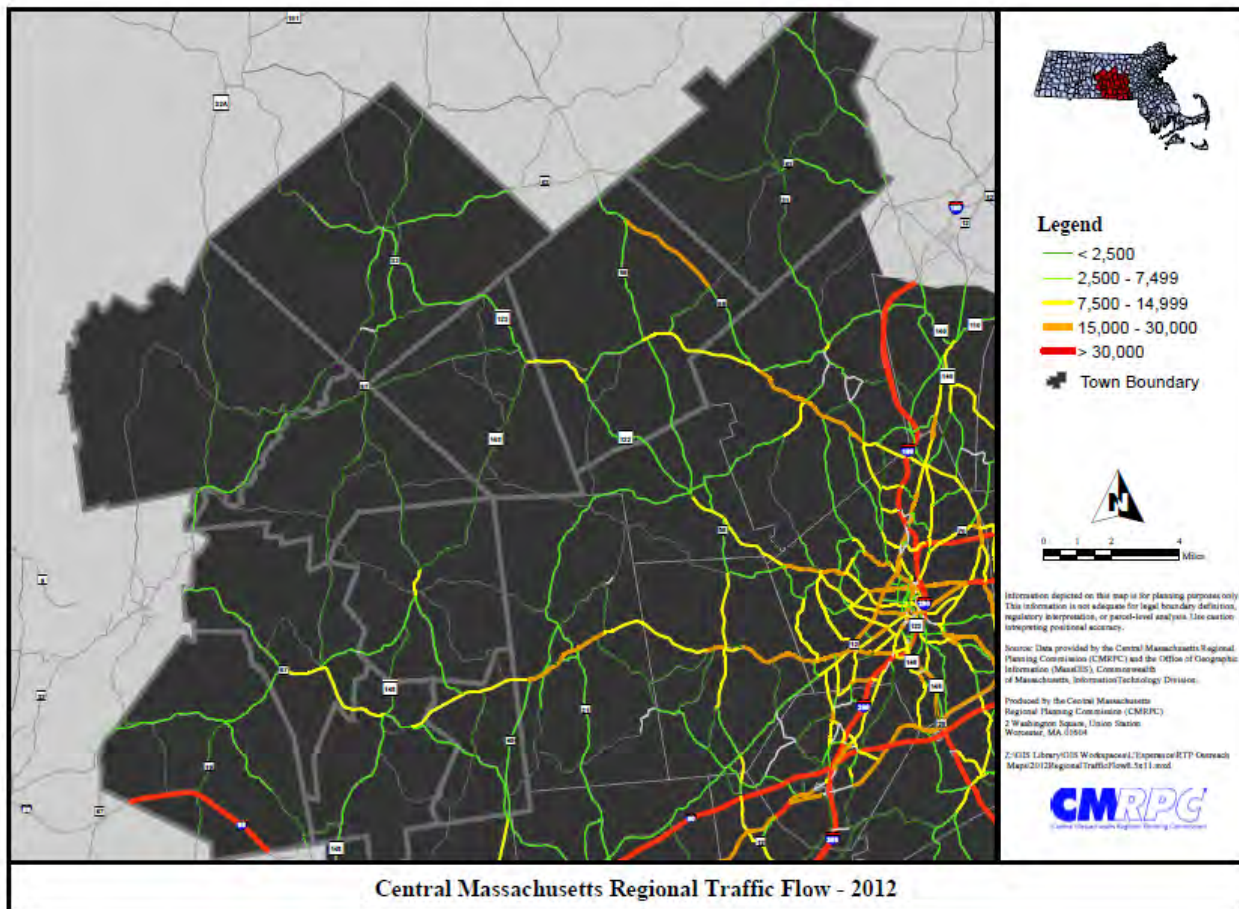
**Figure 12 - Central Massachusetts Regional Traffic Flow 2012**

Together, longer and more congested trips increase greenhouse gas (GHG) emissions, negatively impact air and water quality, and add to the transportation-related costs of those households.  The increased amount of time in their car also means that people are not at home with their families, contributing to the economy, or engaging in other social or healthy activities.

Several long distance trails cross the Rural-11 Region, namely the Mass Central Rail Trail (hiking, biking), the Mid-State Trail (hiking), Mid-State Snowmobile Trail (snowmobile) and the Ware River Rail and Watershed Trail (hiking, snowmobiling).  Local trails are present in each community in their local and state conservation areas, parks, forests, and wild life management areas.

Active railways pass through Barre, Hardwick, Warren, West Brookfield, Brookfield, East Brookfield, and Princeton.  An inactive railway is present in East Brookfield and North Brookfield, while Rutland, Oakham, New Braintree, Hardwick and Barre each host active or potential rail to trail conversions.

The nearest regional airport is located in Worcester, however, the Tanner-Hiller Airport, a one-runway airfield, is located in New Braintree on McAvoy Road.

## Land Use Change

Changes in land use, such as where new buildings are built and where they are abandoned, are an indicator of how the Rural-11 Region has developed and could continue to develop if the status quo is maintained.  Re-directing unwanted components of this trend is a key objective of this study, both in the identification of priority areas as well as in our findings.
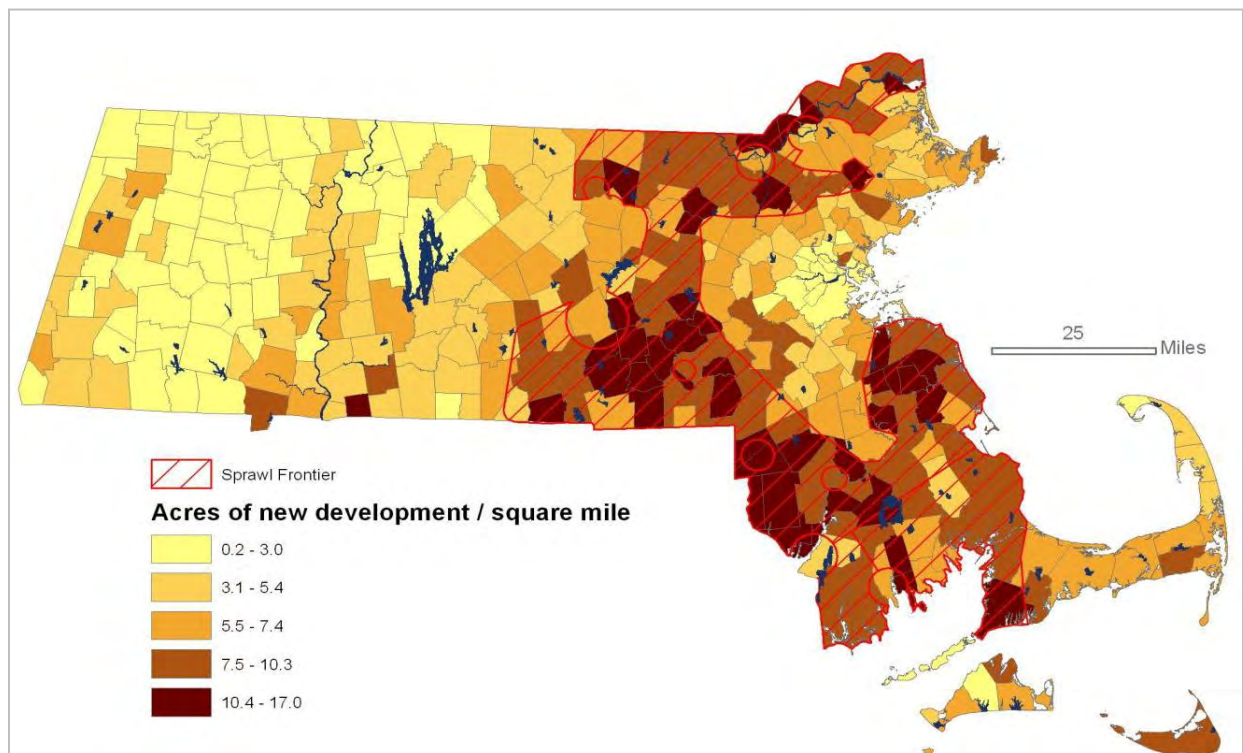
**Figure 13 - Rate of Development 1999 – 2005 (Mass Audubon)**

According to Mass Audubon's *Losing Ground* study, land use in the Commonwealth has been "transformed by new residential and commercial development" over the past 40 years. [10] The study found that between 1999 and 2005 Massachusetts lost an estimated 22 acres of land (approximately 17 football fields) per day to development. In the Rural-11 Region, which was identified as mostly a *sprawl danger zone* in that Mass Audubon report, nearly 4,000 acres (6.25 sq mi) of natural undeveloped land were developed between 1999 and 2005, an area almost 2/3 of the size of East Brookfield (10.4 sq mi). Mass Audubon defines "sprawl danger zones" as areas where development pressure is increasing and significant ecological impacts have already occurred, yet significant regional conservation opportunities still exist (Figure 11). Of note in the Rural -11 Region, the Town of Oakham and North Brookfield were ranked 4th and 5th in the list of towns with the greatest loss of ecological functions from 1999-2005. In the list of towns with the highest percentage of new homes built between 1999 and 2005, Rutland ranked 3rd and Oakham ranked 10th. The Towns of Barre and North Brookfield are among the twenty towns and cities with the most acres of agricultural land converted to development.
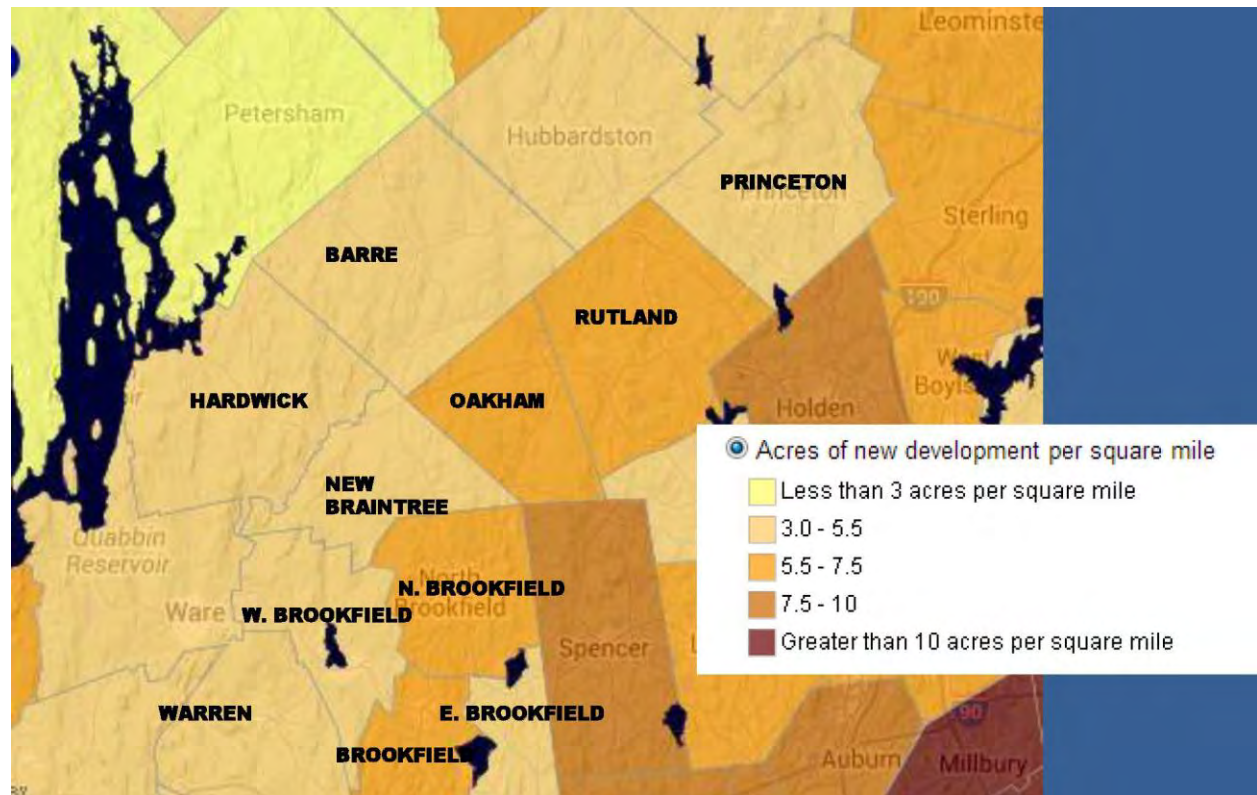


**Figure 14 - Acres of New Development per square mile (Mass Audubon)**

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**10** *Mass Audubon, Losing Ground: Beyond the Footprint, 2009.  www.massaudubon.org/losingground.*

In contrast, the municipalities in the Rural-11 Region preserved almost 4,300 acres of land during the same time period. Seven of the eleven communities in the region preserved over 200 acres and three communities (Barre, Hardwick and Princeton) preserved over 600 acres.  Of note is that Warren and East Brookfield had little or no change in preserved land during this time period (Figure 15).
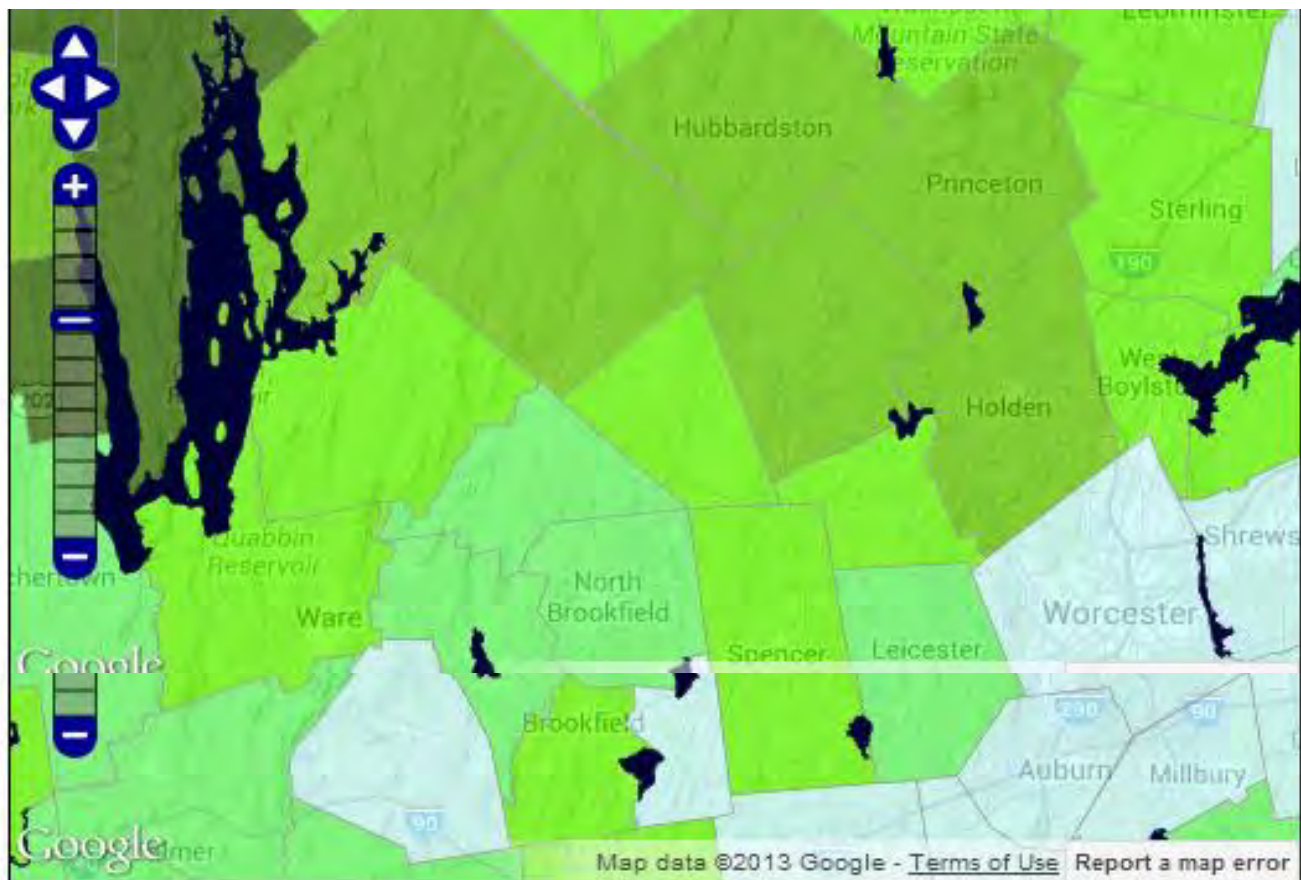


Overlays
○ Overall percent protected
☐ Less then 10%
☐ 10 - 20%
☐ 20 - 35%
☐ 35 - 50%
☐ Greater than 50%

Figure 15- Rate of Protection (Mass Audubon)

## Summary of Community Characteristics

This data, collectively, tells a story that helps paint a picture of the Rural-11 Region.  Seemingly unrelated data points, when considered in the aggregate, often point to larger themes.  For example:

- While the population is educated, it is getting older on average and increasingly diverse ethnically and racially. Consequently, decisions made in the future ought to consider how to match proposed/anticipated employment with the available and proximate labor force, housing preferences, and modes of travel.

- A moderate number  jobs are located in the region, but high housing costs (relative to household income) experienced by a statistically large portion of the population is problematic and could possibly prevent more workers from living closer to where they work.  The availability of appropriate housing stock that is affordable given residents' wages, the opportunity to readily commute to work in the region, and ensuring a workforce that is matched to available jobs is the goal to ensure stable and sustainable communities and regions.  Decisions made in the future ought to consider how to match housing availability with employment and wage opportunity.

- Nearly half of the region's jobs are in only three industry sectors, ranging in annual wages of quite a bit more, to quite a bit less, than the region's average annual wage.  This suggests the need for a broader jobs base in the future to keep pace with other costs and that help align work force wages with work force housing costs.

- Mass Audubon's *Losing Ground* study shows how vulnerable unpreserved open land is to new development, especially low density residential housing. This housing type consumes inordinate amounts of land per unit of housing while there are existing developed areas that are under-capacity or have the potential for redevelopment. Meanwhile, residents express a desire for housing (apartments, townhomes, etc.) that are close to jobs, shopping, and near town centers. And they recognize the numerous and far-reaching benefits to permanently preserving open space.  Development decisions ought to consider opportunities to match targeted growth with preservation of vulnerable open spaces and habitat.

This data begins to provide an understanding of where the Rural-11 Region has been and where it might continue to go should current trends continue.  It highlights strengths and assets that should be carried forward as well as the challenges and opportunities that the future may hold. The priorities that are set by decision makers can produce the desired vision.   To realize that vision, the process begins with setting priorities at the local level and the progressing to the regional and state levels. This process, which provided the basis for the Rural-11 Prioritization Project, is described in Section 5, Methodology.

# 4. Project Definitions

The basis of the Rural-11 Prioritization Project is the identification and evaluation of priority areas – areas intended for development and areas intended for preservation. These areas are for planning purposes and, although in some cases the areas conform to parcel boundaries, the areas are intended to provide geographic location and context for development and/or preservation even if multiple "parcels" are involved.

In addition to priority areas for preservation and development, the project identifies significant infrastructure investments that are critical to realizing the principles of the Prioritization Process. This material is contained in Section 9, Regionally Significant Infrastructure Investments (RSIIs). In addition to transportation investments, other significant infrastructure considerations such as water and wastewater infrastructure investments are discussed as well. Information about non-transportation infrastructure is provided in Section 11, Additional Infrastructure Investment Needs.

## Priority Development Areas (PDAs)

Priority Development Areas (PDAs) are areas within a town that have been identified as capable of supporting additional development or as candidates for redevelopment. These areas are generally characterized by good roadway and/or transit access, available infrastructure (primarily water and sewer), and an absence of environmental constraints. In addition, many of these areas have undergone extensive area-wide or neighborhood planning processes and may have detailed recommendations for future actions. Rather than specific projects or sites, PDAs represent general locations where appropriate growth may occur, and where public investments to support that growth will be directed.

PDAs can range in size from a small area to many acres. They may include a mixture of retail, industrial and office uses as well as housing, with a particular emphasis on housing which meets affordability thresholds and/or is accessible by the local workforce. Redevelopment of under-utilized or abandoned properties, as well as adaptive re-use of existing buildings/projects, can also fall under the auspices of a PDA. PDAs might include areas designated under state programs such as Chapter 43D (expedited permitting), Chapter 40R (smart growth zones) or Economic Opportunity Areas. PDAs are identified with

the municipal code followed by sequential numbers (e.g. 124-4 for PDA in Hardwick.). No priority is assigned to any of the identifying labels.

## Priority Preservation Areas (PPAs)

Priority Preservation Areas (PPAs) are areas within a town that deserve special protection due to the presence of significant environmental factors and natural features, such as endangered species habitats or areas critical to drinking water supply, scenic vistas, areas important to a cultural landscape, or areas of historical significance.  In general, existing parks or new park facilities do not fall within this category.  It is important to remember that PPAs are lands not currently permanently protected.  This could include land that is temporarily protected by Chapter 61, 61A or 61B, a conservation restriction that has not been approved under an appropriate section of Chapter 184, by virtue of ownership by a land trust, etc.

Like PDAs, the areas identified for priority preservation efforts can vary greatly in size.  Areas of Critical Environmental Concern (ACEC), aquifer recharge areas, and designated priority habitats are some of the natural resources that might warrant PPA designation. Similarly, PPAs may be critical to linking open space areas and trails within a community or across municipal boundaries. Also, some PPAs may include some areas of existing development. The inclusion of such areas does not indicate that the existing land uses will be removed over time, but that preservation of natural and cultural resources in that area is a priority. PPAs are identified with the municipal code followed by sequential numbers (e.g. 202-8 for PDA in New Braintree.) No priority is assigned to any of the identifying labels.

In some cases, an area might be identified as a combination of these two concepts, known as Priority Preservation/Development Areas (PPA/PDAs).  These are areas that would have components of both development and preservation, or areas that have not been fully planned but are expected to incorporate new development with substantial preservation.  An example of this might be a property that contains both development potential and significant natural resources, so that the community's goal would be to encourage development on part of the property and preserve the rest.  One area (actually one area that lay on the border of two adjacent towns, so two identification numbers) was identified as a priority preservation /priority development area, because community leaders felt that its development was inevitable but desired that measures be taken to preserve the area to the greatest degree possible.

## Significant Infrastructure Investments (SIIs)

Significant Infrastructure Investments (SIIs) are critical in supporting increased development of identified PDAs while respecting the need to protect PPAs. Transportation projects could increase efficiency and enhance interconnectivity for facilities which address transportation needs across multiple towns or larger geographic regions. In most cases, these potential projects address major roadways. However, SII's also address transit, bicycle, and pedestrian facilities that meet regional travel needs, either individually or collectively. Regional SII projects could also include improvements for commercial airports, as well as freight facilities that have significance in the regional economy.



In addition to transportation related infrastructure investments, several other significant infrastructure investments were considered in this study. They include the non- transportation infrastructure investments that will be necessary to serve new growth and redevelopment. These projects might be significant to a municipality or a sub-region. SIIs are identified with the municipal code followed by sequential letters (e.g. 222-A for an SII in Oakham.) No priority is assigned to any of the identifying labels.

Examples of SIIs include the following:

- Transportation projects such as bridge or roadway improvements,

- Water, sewer, and stormwater infrastructure expansion or improvement,

- Water resource protection,

- Information technology infrastructure, or

- Access to three (3) phase power

In some cases, these potential projects address demand for water, sewer/wastewater, and storm water (or a combination thereof) services, and may include new infrastructure, facility upgrades, and/or an

increase in capacity to existing infrastructure that either individually or collectively serves regional needs.

Along with new other investments, improved water and wastewater management are critical to the success of the Rural-11 Region.  Input from the towns in the study indicated that there is a tremendous need for infrastructure maintenance, reduction of inflow and infiltration, and improvement in the quality of treatment to protect water resources in addition to desired expansions of the current systems.

Yet solutions will not always be found solely through regional or even community-wide infrastructure development or expansion.  Decentralized wastewater disposal and other creative approaches will be important to meeting the needs of the region. Sustainable water management practices adopted at the local level may significantly decrease the anticipated demand for water that traditional approaches may require under any growth scenario and the subsequent impact on wastewater systems.   These issues face not only this region, but the Commonwealth as a whole.

## 5. Methodology

The methodology used for the Rural-11 Prioritization Project had several components, including local and regional meetings, identification of priority areas and investments, and a screening process to determine which priorities at the local/municipal level were also significant at the regional and state levels.  This planning process was constructed as an ongoing conversation between local and regional priorities. The final list of regionally significant PPAs, PDAs and SIIs contained in this report represents a collective body of knowledge compiled from multiple sources using a diverse array of methods and media.

Public outreach for the project included the creation of a project website. The website during this project was accessible at:  http://www.cmrpc.org/rural11pp . It served as the repository for all project based information, background materials, a meeting calendar, maps, PowerPoint presentations, contact information, a public comment portal, etc.  Additionally, information about public meetings was distributed to media outlets serving the Rural-11 communities, as well as to area legislators, Mass Audubon distribution lists, and many other lists of various groups working in the region.  The existing networks within the region were instrumental in distributing information and promoting the various meetings and regional forums to their various membership and distribution lists.

Because this was funded  by District Local Technical Assistance, the proposal for this project was first vetted in November 2012 in a meeting with community leaders from the region.  After further discussion, planning board members and town administrators from several communities chose to pursue the project.  CMRPC staff worked with leaders from each community, often planning board members or boards of selectmen or both, to gain each community's commitment (by vote and in writing) to participate in the project.

The seven (7) key steps in the planning process were:

### Step One: Conduct Initial Research

The first step in the project process was to do initial research on each town in the study area.  This included review of existing municipal reports, plans, studies, and documents such as:

- Master Plan or Community Development Plans

- Zoning bylaws; multi-family housing, cluster/Open Space Residential Development (OSRD), inclusionary zoning, etc.

- Subsidized Housing Inventory status (MGL 40B)

- Priority Development Sites (MGL 43D)

- Open Space and Recreation Plans

- Heritage Landscape Inventories; Reconnaissance Reports

- Any other neighborhood studies or reports

These documents were reviewed to determine key goals that the towns had for preservation and development, specific locations where each was desired, and information on major transportation needs and initiatives. These areas were then noted or hand drawn onto draft base maps, so that the project planners had a sense of what the communities were already thinking about in terms of planning for preservation and development. To initiate the local dialogue, project planners then scheduled informal meetings with a variety of community leaders in each municipality.

## Step Two: Meet with Community Leaders/Planners and Prepare Draft Maps

The next step in the process was to receive feedback from the local representatives relative to the preliminary list of findings identified through the research phase. At the initial meeting with the community leaders, the project planner(s) explained the background and goals of the project. Only one of the Rural-11 communities has a professional planner. The Town of Warren has a planning consultant. In most communities, these meetings included planning board members; selectmen; conservation, sewer, and agriculture commission members; emergency management personnel; public works employees; open space, recreation and housing advocates; town administrators and executive secretaries; and other appropriate community members. Together, findings from the initial research process were reviewed, and the working map of the priority areas for development and preservation continued to evolve. The community leaders provided insight on whether the plans were up to date and if they accurately represented the municipality's current attitude towards preservation and development. Corrections and updates were made to the map during meetings and through appropriate follow up. The initial list of identified transportation and infrastructure investments was also refined through these discussions.
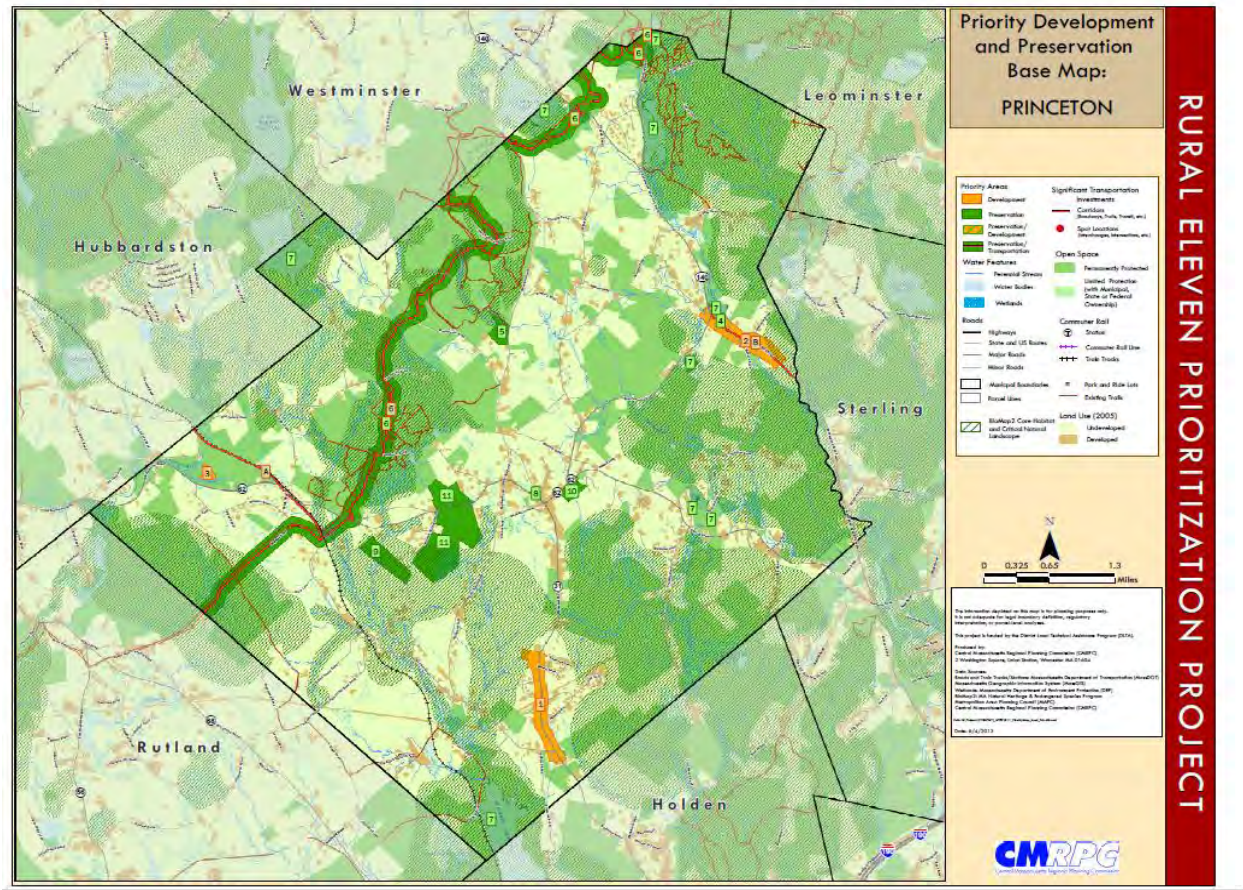
**Figure 16 - Example of Draft Local PDA, PPA and SII map**

## Step Three: Local Public Meetings

Following the initial meetings with the municipal staff in each of the 11 towns, public meetings were scheduled.  In some cases, the meeting was held for the sole purpose of obtaining input on this project; in other cases it was included as a topic on the agenda at a regularly scheduled meeting of a town board (e.g., Planning Board or Board of Selectmen). The decision as to which type of meeting was held was made by the municipality based on their knowledge of their communities and their respective boards.

Each municipality was tasked with publicizing the meeting throughout the community.  This included inviting residents and businesses, staff, and members of boards and committees as well as posting a meeting notice. Dates of the meetings are included in **Appendix B**.

At each public meeting, the CMRPC staff presented the project background and goals of the Rural-11 Prioritization Project planning effort.  This was followed by a presentation of the maps and a discussion about development and preservation priorities, as well as infrastructure investments identified by the town.  It was considered very important to be sure that any gaps in information were identified so that the community's priorities were as accurately gathered and mapped as possible.  During this meeting, the public was also notified about the upcoming meetings including Regional Forums, which were held in June and September.

Follow-up to the public meetings varied from community to community. In many cases, emails and/or telephone call were exchanged with community leaders to ensure accuracy, and revisions to the maps were subsequently made.

## Step Four: Regional Public Forums

A key step in this regional planning process was to hold a Regional Public Forum and solicit input from residents, businesses, municipal staff and officials and other stakeholders in a format that allowed participants to think beyond town boundaries. The Regional Forum was held on the evening of Wednesday, June 26, 2013 at the New Braintree Town Offices.

A flyer was created for the June public forum and was sent to community planners, municipal staff and known organizations for their use in publicizing the meeting.  Public outreach and information about the forum was also distributed to identified groups (e.g., Mass Audubon, East Quabbin Land Trust) and media outlets.  Specific outreach through phone calls, emails and site visits was also performed to community organizations in the Rural-11 Region.

The forum featured an open house to allow attendees to review various maps and meeting materials and ask questions about the project prior to the formal presentation.  The maps included the locally identified PDAs, PPAs and STIs as well as other geographic information for the entire Rural-11 study area, including:  water and environmental resources, land use, environmental justice areas, transportation resources, and BioMap2[11] data sets.

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11 **BioMap2 is a product of the Massachusetts Natural Heritage and Endangered Species Program (NHESP) and the information is a combination of numerous of pieces of geospatial data about the state's species and the ecosystems and landscapes that support them.**
**http://www.mass.gov/dfwele/dfw/nhesp/land_protection/biomap/biomap_home.htm.**
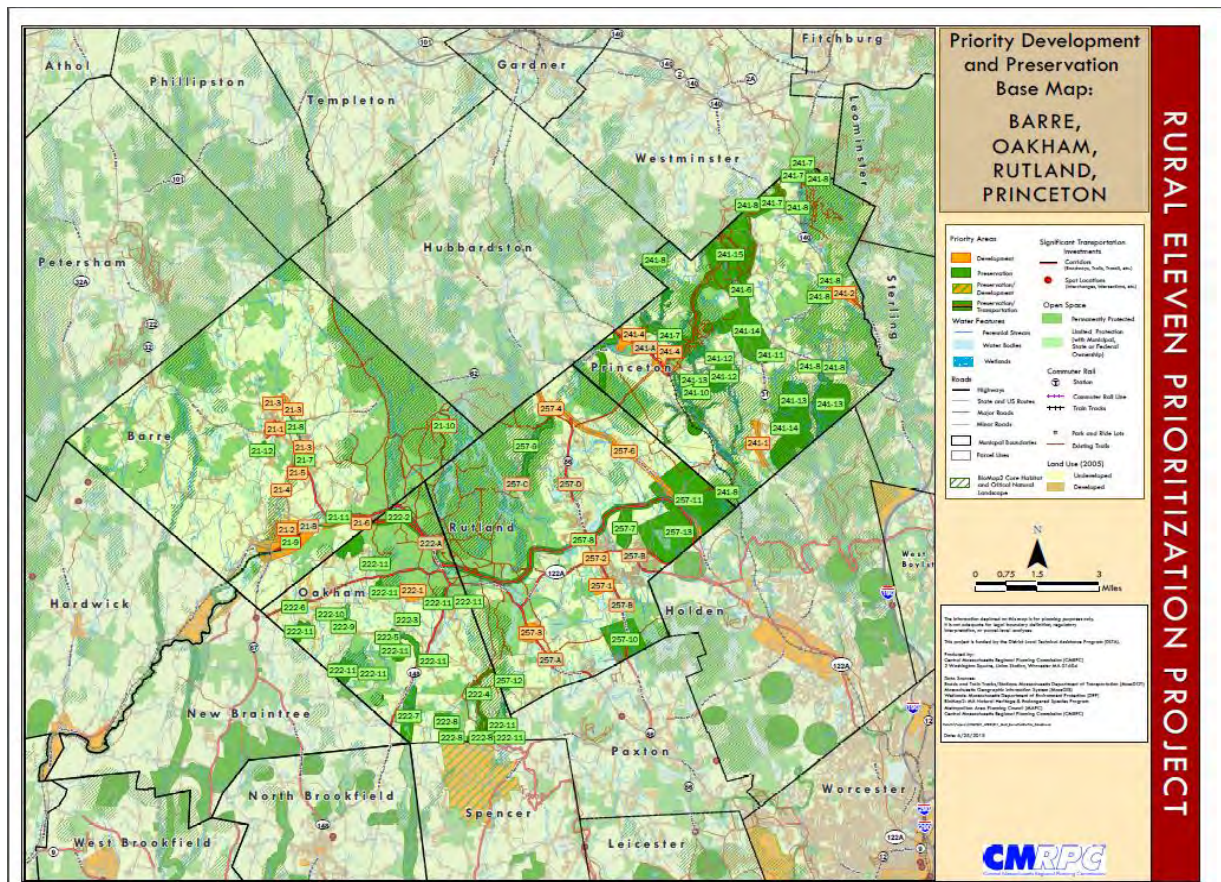
**Figure 17 - Example of Multi-Municipal Map from the Regional Public Forum**

A formal presentation followed the open house and provided attendees with baseline information about the Rural-11 Region such as demographic, employment, commuting patterns, and housing trends. This information is described in Section 3 and a link to the website with the presentation is included in **Appendix C**.

Prioritizing PDAs and PPAs on a regional level was an important concept to present and discuss with attendees. Following the presentation of the baseline demographic and economic data, a table exercise was used to introduce the regional concepts for prioritization (e.g., land use, transportation infrastructure, the location of environmental justice populations). These and other concepts were mapped on multi-municipal maps with three to four adjacent towns. Participants were asked to review the concepts and provide input on how they would direct limited public financial resources to the PDAs and PPAs based on these concepts. The input was captured through comments and other mark-ups on the maps that illustrated the locally-identified priority areas and infrastructure investments for the

groups of three to four municipalities. Participants were also asked to identify additional concepts that they believed ought to be used in determining regionally-significant priorities.



**Figure 18 - June 2013 Regional Forum**

Forum attendees were also encouraged to submit additional comments either on a comment form, which was made available at the forums, or through the project web site.

## Step Five:  PDA and PPA Roundtable Discussion

In addition to the forum, the project team convened a meeting with Janet Pierce, CMRPC Regional Services Manager;  Cynthia Henshaw, East Quabbin Land Trust Executive Director; and William Scanlan, Warren Town Planner and Community Development Consultant, to garner additional input and expertise regarding identified priorities and the regional screening process.  As experienced planning and conservation professionals, and being knowledgeable not only about their communities but also about the region, it was extremely valuable to discuss the priority areas from a regional perspective.

The group analyzed the locally identified PDAs from a market feasibility and development potential perspective, and analyzed the locally identified PPAs with an eye to connectivity, habitat and resource value, recreational opportunities, and groundwater protection.  This dialogue provided meaningful feedback on many issues.  The discussion highlighted the importance of:

- Town and village centers;

- Looking at development and preservation areas together so that they can co-exist and benefit from one another in many cases;

- Mill and brownfield redevelopment projects;

- Agriculture and woodlot productivity;

- Tourism;

- Water and wastewater infrastructure needs;

- The history and landscape value of the region.

As with input from the forums, comments and recommendations from the region's planners were incorporated into the regional screening process and informed the final list of regionally-significant priority areas.

## Step Six:  Determining Regional Significance

A regional screening process was performed by the CMRPC for the locally identified Priority Preservation Areas (PPAs), Priority Development Areas (PDAs) and the combination of Priority Preservation/ Development Areas (PPA/PDA) to determine which areas are regionally significant.

In this context, locally-significant priority areas were screened through parallel processes that utilized multiple sources of data and public input. The Regional Screening Criteria were used to guide the assessment of how the various areas align with regional and state priorities for development, preservation and infrastructure investment. A complete listing of the Screening Criteria is contained in **Appendix D**.

Examples of regional criteria for screening the PDAs are:

- Is the area on or adjacent to already developed areas?

- Is infrastructure (transportation, water, and sewer) available to serve the area?

- Does the development area serve multiple communities?

- Does the development potential include opportunity for housing?

Examples of regional criteria for screening the PPAs are:

- Is the area in, or does it connect to, a wellhead or water supply protection area?

- Does the area contain prime farmland soils?  Is it a working farm?

- Does the area connect to other permanently protected land?

Section 7 provides more detail about the regional screening process and results.


## Step Seven: Regional Public Presentation

Similar to the Regional Public Forum held in June, a Regional Public Presentation (with an "open house" portion) was held in September to summarize the process and present the results of the regional screening process, as well as recommendations and next steps.  The Regional Public Presentation was held on the evening of Wednesday, September 25, 2013 once again at New Braintree's Town Offices.

In addition to general outreach through email, the web and media outlets, specific outreach was again conducted to Municipal boards and commissions as well as community organizations in the Rural-11 Region.

The presentation provided background on the study and then reviewed the regional screening process and results, discussion of two growth approaches and an overview of proposed Regionally Significant Infrastructure Investment (RSIIs) categories. The presentation discussed the potential outcomes from one approach that used the entire set of locally identified priority areas (Distributed Growth approach) and one that used just the regionally significant priority areas (Regional Priorities Growth approach) to show the issues and opportunities that could result from different development patterns. Sections 6 and 8 provide a more comprehensive discussion of the two growth scenarios, and Section 9 describes the framework for the transportation and infrastructure investment categories.

Finally, the presentation included a panel discussion of the general findings of the study and the concept of a plan and a future vision or identity for the Rural-11 Region.  The panel discussion was moderated by CMRPC Executive Director, Lawrence Adams.  The panelists included:

- Donna Baron, Massachusetts Broadband Institute, Program Director

- John Clarkeson, Executive Office Of Energy And Environmental Affairs, Policy Advisor

- Phil Stevens, Carter Steven Dairy Farm, Owner

- Cynthia Henshaw East Quabbin Land Trust, Executive Director

- Tony Marcotte, MDP Development LLC, (Warren Mill Developer)

The panelists supported the regional approach to prioritizing areas for development and preservation. One of the ideas that emerged from the discussion was the notion of a shared vision for this region. It has been said before that this collection of communities is lacking an identity, but the idea of a shared vision with common goals is one that has merit. A set of common goals that the communities can rally around will move this region forward toward a "Vision". One comment that came from an audience member was that the desire to connect the historical, the recreational, the natural and the agricultural for the purpose of drawing tourists to the Rural-11. This idea has connections to comments made by each of the panelists: balancing development with infrastructure investment and preservation to create an accessible region that supports quality of life, natural amenities, partnerships between the public and private sectors, cooperation between preservation and development interests, and a mutual goal to "get things done as efficiently and cost effectively as possible". The foundation for a larger discussion around goals, objectives, and a "Vision" was set at this regional meeting.

# Rural -11 Prioritization Project

2013

| February- March | • Review Previous Plans and Studies<br>• Local Meetings |
| April-June | • Community Level Public Meetings<br>• First Regional Forum |
| July- September | • Assessment & Identification of Regional Priorities<br>• Second Regional Meeting |
| October- December | • Project Conclusion and Final Report |
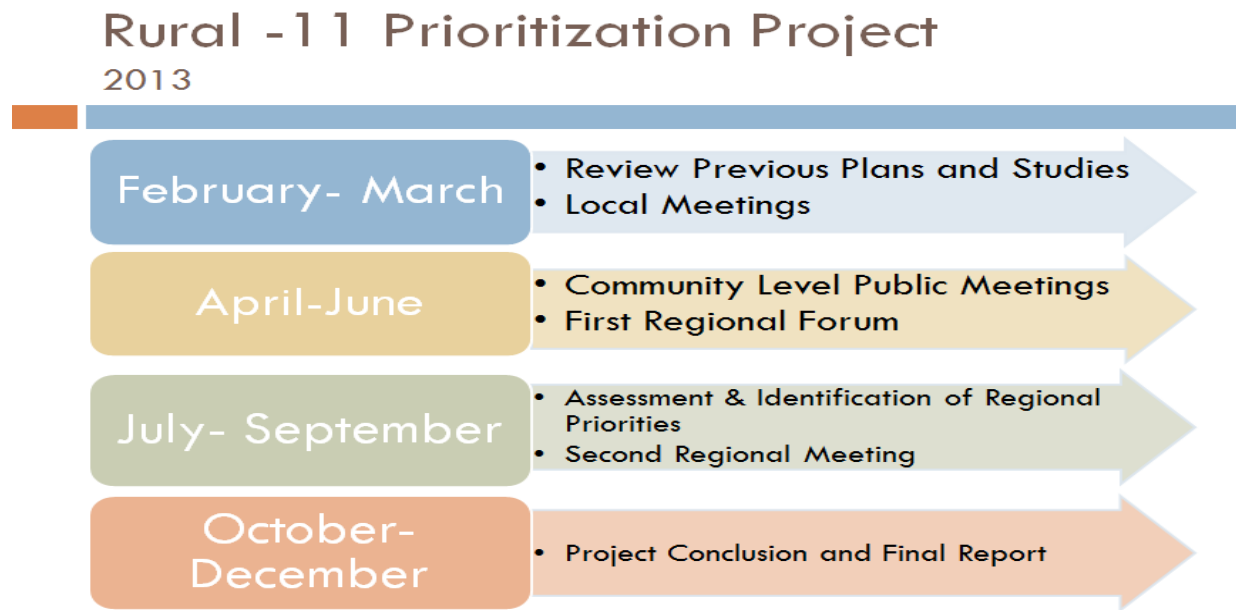
**Figure 19- Summary/Timeline of Project Process**

This final report is the culmination of the seven (7)-step process.

## 6.0    Locally-Identified Priority Areas

A total of 162 priority areas – PDAs and PPAs (as well as 2 combination PPA/PDA areas) – were identified by the 11 towns that were part of the Rural-11 Prioritization Project (Figure 17).   In addition to the PPAs and PDAs, three (3) categories of significant infrastructure priorities were identified:

- Infrastructure - A general non-transportation category;

- Infrastructure (Transportation) – A general category that typically includes road way improvements; and

- Infrastructure (Preservation/Transportation) – A category that includes the Rural -11 regions two rail trails as non-vehicle transportation corridors.

| Town | PDA | PPA | PDA/PPA | SII | SII (T) (A subset of SII) | SII(P/T) (A subset of SII) |
|---|---|---|---|---|---|---|
| Barre | 9 | 9 | 1 | 7 | 2 | 1 |
| Brookfield | 7 | 9 | | 6 | 2 | |
| East Brookfield | 5 | 3 | | 7 | 4 | |
| Hardwick | 9 | 7 | | 7 | 2 | 1 |
| New Braintree | 3 | 9 | | 8 | 5 | 1 |
| North Brookfield | 10 | 13 | | 8 | 3 | |
| Oakham | 1 | 10 | 1 | 6 | 4 | 1 |
| Princeton | 4 | 11 | | 3 | 1 | |
| Rutland | 7 | 5 | | 7 | 5 | 1 |
| West Brookfield | 6 | 8 | | 6 | 1 | |
| Warren | 7 | 8 | | 7 | 3 | |
| Total | 68 | 92 | 2 | 72 | 32 | 5 |

**Figure 20 - Summary of Local Priority Areas**

These locally-identified areas reflected locations identified in municipal planning documents and through input from municipal staff and boards.  Locally-identified priorities for development and preservation were further informed by comments provided during the June Regional Forum and the September Regional Meeting. Detailed maps showing the PDAs and PPAs identified by each municipality can be found in the map series included in **Appendix D.**  Corresponding tables to identify the areas according to names assigned by the municipalities can also be found in **Appendix D**.
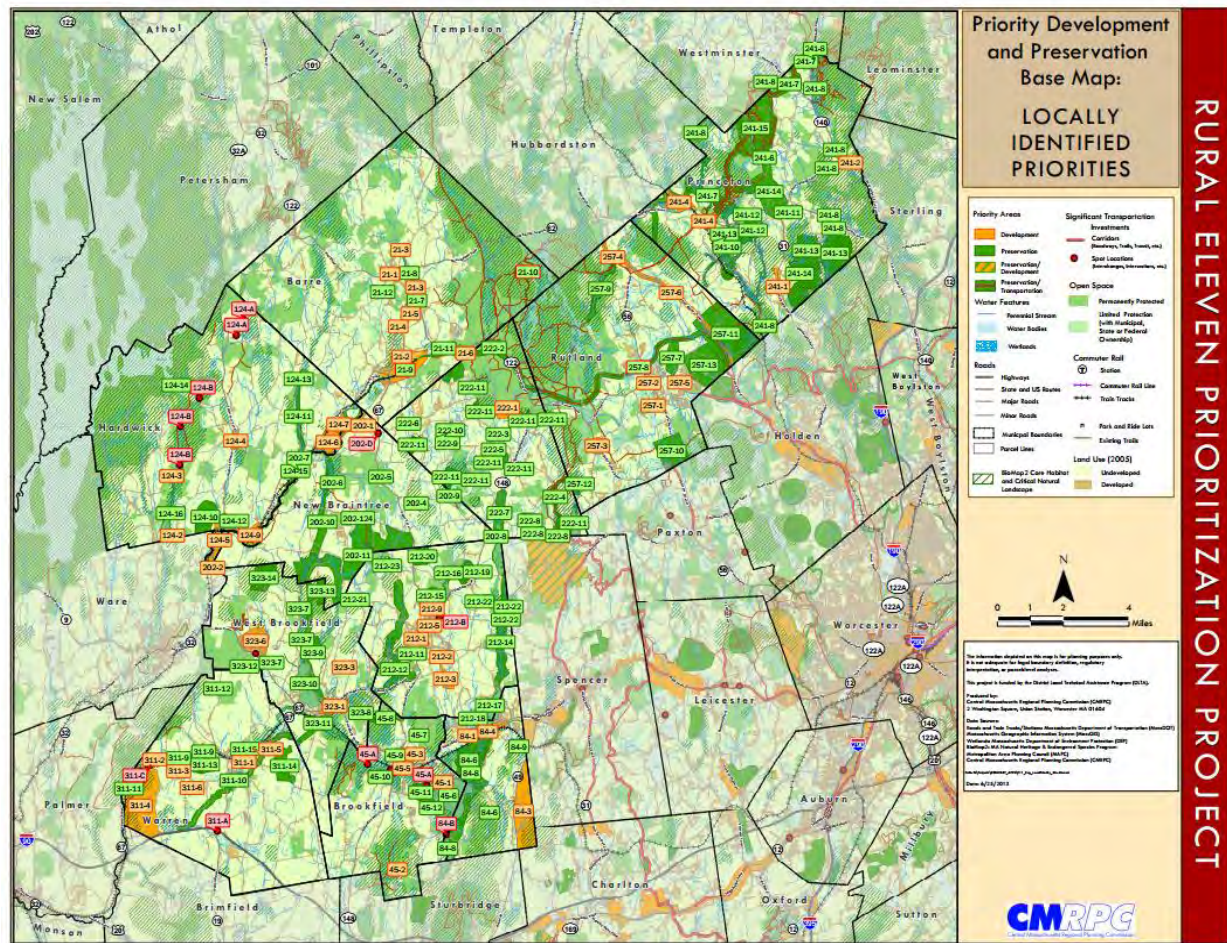
**Figure 21 - Overview map of local identified PPAs, PDAs, and SIIs**

## Priority Development Areas

Covering over 6,800 acres, a total of 66 PDAs, and 4 PDA/PPAs, were identified by the towns included in the Rural-11 Region. The locally identified PDAs include several areas that have been the focus of local efforts in recent years, including, for example:

- Areas within the Route 122 ( the Lost Villages Scenic Byway) and Route 9 corridors;
- Several  mills and brownfields;
- Business districts;
- The downtown centers of Hardwick, Barre and West Brookfield; and
- Several industrial areas.

Many locally-identified PDAs are areas with large amounts of vacant undeveloped land. And, for the most part, they are often located on the main roadways in the region, illustrating the importance of access to the areas and the need to balance development and congestion on the region's roadways. This will be an important consideration when determining how to create opportunities for improved transportation access in the region.

Collectively, the locally identified PDAs cover nearly 6,850 acres. As illustrated in the chart below, developable commercial and industrial land comprises 22%, developable residential land comprises 28% and the remaining 50% is other developable or undevelopable land (Figure 18).



**Local PDA Existing Land Use**

Total Undevelopable Land 47%

Developable Comm/Industrial 23%

Developable Residential 30%

Developable Other 0%
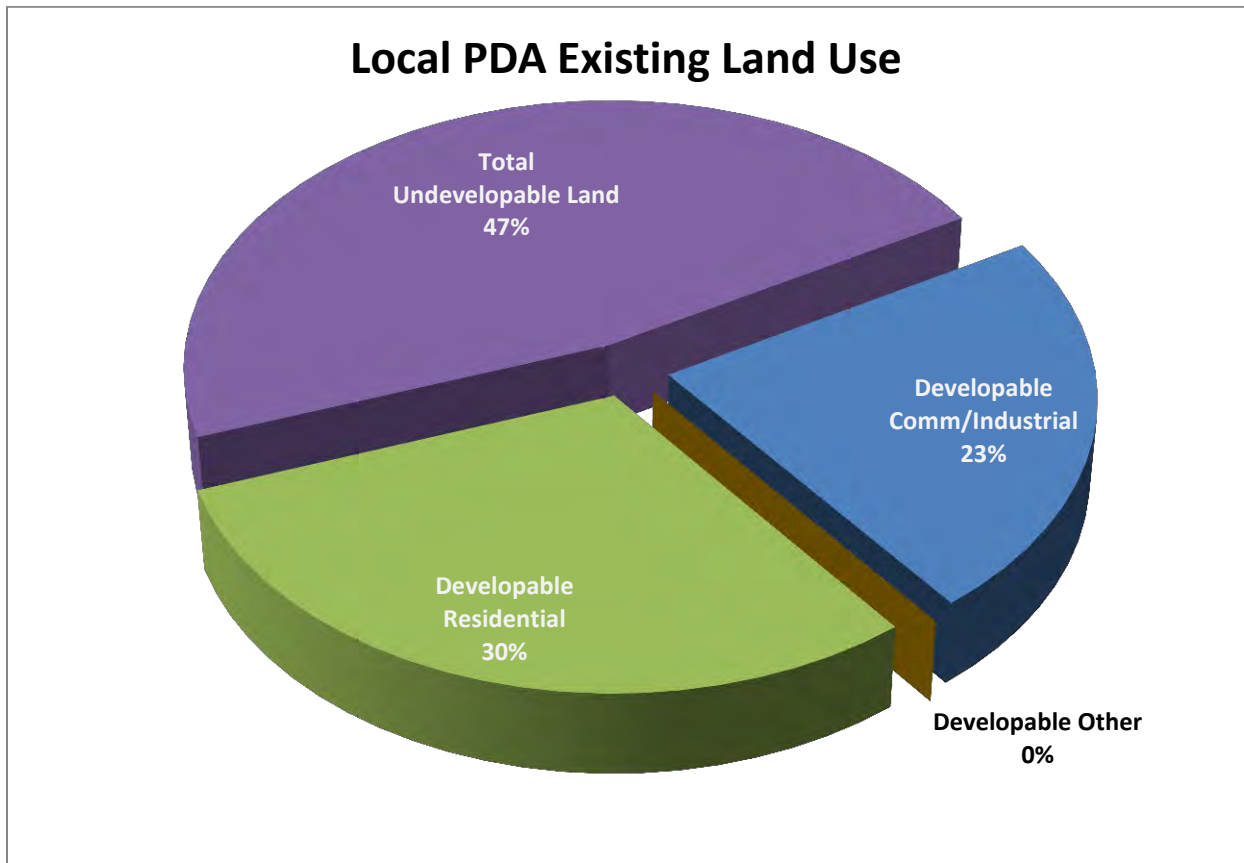
**Figure 22 - Existing Land Uses in Locally Identified PDAs (%)**

## Priority Preservation Areas

There were 92 local PPAs identified across the study area. These areas cover almost 24,000 acres. The preservation areas ranged in size from more than 1,000 acres to less than 20 acres. Most communities

identified a number of PPAs that, when combined, were intended to protect/preserve watershed lands and lands for agricultural purposes.

Some of the key characteristics of the lands locally identified as priorities for preservation include:



- 16 PPAs include DEP Approved Zone IIs and 23 intersect Interim Water Protection Areas (IWPAs)[12].

- 74 PPAs intersect either a 100 year or a 500 year flood zone. (Flood data is using the older FEMA Q3 Flood Zones. No DFIRM data is available for the Rural-11 towns.)

- 63 PPAs intersect a BioMap 2 Core Habitat area.

- All told, the locally significant PDAs and PPAs include 3,646 acres of prime agricultural soils; and

- While 12 PPAs are active working farms or farmland parcels, almost 700 working landscapes were identified (see Section on Working Landscapes). The 12 working farm PPAs were typically those that were identified initially as part of the heritage landscape inventory surveys.

## Development Potential

Clearly, if the any or all of the local PDAs are developed, more jobs would be generated for the region. The number of jobs for each PDA could be estimated based on the land contained inside the development area boundaries, existing land use, employment, zoning district regulations, environmental constraints (e.g., protected wetlands, etc.) and density assumptions developed by the CMRPC and based on the methodology previously applied in similar studies. The resulting estimates would include the potential for new growth on vacant land, as well as estimates for an increase in jobs available when

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[12] *A Zone II is that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation). The Interim Wellhead Protection Area (IWPA) as the primary, protected recharge area for Public Water Supply groundwater sources.*

PDAs are developed or partially developed. If all of the locally identified PDAs were built out to their full capacity, there is the potential to accommodate many more new jobs. This would likely be a significant number of new jobs and would be an increase over the existing employment in the areas.   New jobs and new population growth in the region would demand new housing development.

Build-out capacity represents the total potential for jobs and housing units in the study areas.  Complete build-out – development of all areas to their full capacity – is a hypothetical number, however, and is not anticipated to be achieved during the long-term planning horizons.  Further, the Rural-11 Region, like much of the nation and the state, has grown slowly in recent years, and a rapid recovery is uncertain.  Even assuming a full recovery by 2020 and modest growth thereafter, CMRPC projects only 590 additional new jobs in the Region from 2010 – 2035[13], which would be a small percentage of the estimated capacity of the locally identified PDAs.

Of the local PDAs identified, very few (5) were targeted for housing development.  This is consistent with the general housing development trends in the region. In the Rural-11 Region, there are not the housing development pressures that other regions in Central Massachusetts face.  In fact in 2012, the entire Rural-11 Region only issued 45 building permits for housing units.  That included 24 for the Town of Rutland alone.  The remaining ten (10) communities issued only 21 building permits.  Participants indicated that housing was a lower priority than economic development.  Particularly as new housing is often viewed as negatively affecting a community's rural character.

There were five (5) areas identified for housing development potential in particular. Also, ten (10) village centers were identified as priority development areas, each with some potential for mixed use housing and commercial development or adaptive reuse redevelopment.  This should be considered in relation to the almost 50 commercial or industrial areas identified.  The availability or lack of availability is in part related to challenges and opportunities of housing development in the region.  If the commercial and other PDA commercial /industrial areas are built out, will there be enough housing built to accommodate the new employees?



_**13** As part of the Regional Transportation Plan process, projections are developed by CMRPC and the other regional planning agencies based on regional employment control totals issued by MassDOT. The projections show an additional 4,780 jobs in the Central Thirteen region by 2035._

The heavy emphasis on employment in the local PDAs with little emphasis on housing raises a concern because local and regional economies will be strongest when employees are able to live and raise their families nearby.  It is therefore important to consider housing creation at the same time that we discuss job creation opportunities. It also indicates that continued dialogue is needed among municipalities, RPAs, the state, the development community, and community organizations about how to plan for and build workforce housing that keeps pace with the number of new jobs projected in the Rural-11 Region, increases the diversity of the housing stock, and connects residents and employees.

Despite the slow housing growth, when planning for growth and preservation in the Rural-11 Region, and analyzing the impact of priorities, it is important to remember that the Rural-11 Region is likely to remain a region with more household growth than employment growth.  That is not to say that strategic planning cannot shift the ratio farther in the direction of employment, but realistically speaking, employment growth over the next twenty to thirty years will be modest.  The fact that the rate of household growth is higher than job growth is also a strong reason to increase the focus on housing development.  Additional households will add pressure to the market, increase scarcity, increase prices and make economic development even more difficult. The Rural-11 Region currently exhibits a fairly dispersed development pattern with a few exceptions.  Given the roadway network in the region, the direction of travel is similarly dispersed and not compact.

> **Strategy 1:**  Thus one of the strategies to future development will be to focus development energy in a few key locations in the communities to offset this existing dispersed pattern.

## Projected Future Conditions

Every four years, as a component of required Regional Transportation Plans, Metropolitan Planning Organizations (MPOs) around the country develop projections for trends relative to various housing and employment characteristics.  This data is then used locally, regionally, and statewide to inform numerous planning and implementation activities.  It is important to remember that these projections are intended to provide a picture of general socio-economic changes anticipated in the region.

In Spring of 2010, MassDOT Office of Planning released the draft future demographic control totals for all the State's subregions. The CMRPC region's population and employment totals as released were in keeping with the demographic trends the region was experiencing in the past decade. In December 2010, MassDOT released the final regional control totals for population, households, and employment for the years 2017, 2020, 2025, 2030, and 2035.  Municipal household and population data for the years 2000 and 2010 were taken from the US Census Bureau. Employment data for the years 2000 through

2009 were derived from tabulations done by the Massachusetts Executive Office of Labor and Workforce Development. CMRPC staff then distributed the control totals for the future years mentioned above  to the town level based upon past growth trends, land use and infrastructure capacity, planned future projects, and stakeholder input, including that of the Central Massachusetts Metropolitan Planning Organization (CMMPO) and CMMPO Advisory Committee. Transportation staff worked very closely with municipal community development and land use staff throughout the entire process, making sure their input and comments were incorporated.

CMRPC applied local analysis and information to the MassDOT data and released regional population and employment projections for the period 2010 to 2035.  Remember that these long term projections through 2035 are simply educated assessments which offer a picture of likely socio-economic changes in the region, including the population, number of households and number of jobs by municipality.  By providing these projections to each municipality, CMRPC hoped to inform discussions taking place locally and within the region about how communities can effectively shape their policies to address expected growth.  Together, CMRPC and the towns it serves can move the region toward building the future most desired by those who live and work within its boundaries.

| Town | 2010 Population | 2010 Households | 2010 Employ-ment | 2035 Population | 2035 Household | 2035 Employ-ment |
|---|---|---|---|---|---|---|
| Barre | 5,398 | 2,025 | 1,230 | 6,100 | 2,420 | 1,530 |
| Brookfield | 3,390 | 1,375 | 460 | 3,810 | 1,590 | 470 |
| East Brookfield | 2,183 | 828 | 420 | 2,450 | 970 | 430 |
| Hardwick | 2,990 | 1,094 | 390 | 3,360 | 1,270 | 410 |
| New Braintree | 999 | 370 | 210 | 1,130 | 420 | 220 |
| North Brookfield | 4,680 | 1,862 | 910 | 5,280 | 2,090 | 990 |
| Oakham | 1,902 | 685 | 210 | 2,140 | 800 | 220 |
| Princeton | 3,413 | 1,279 | 740 | 3,930 | 1,520 | 760 |
| Rutland | 7,973 | 2,791 | 1,060 | 9,680 | 4,020 | 1,160 |
| Warren | 5,135 | 2,021 | 600 | 5,940 | 2,470 | 600 |
| West Brookfield | 3,701 | 1,479 | 830 | 4,160 | 5,290 | 860 |
| | | | | | | |
| **Total** | **41,764** | **15,809** | **7,060** | **47,980** | **22,860** | **7,650** |

Figure 23 - Population, Household, and Employment projections

In order to understand potential future land use changes in the region and the possible benefits and impacts of targeted growth, CMRPC considered two development approaches for the Rural-11 Region, Distributed Growth and Regional Priorities. Which were informed by the demographic projections above.

## Distributed Growth Approach

The first approach, called Distributed Growth, represents a "business as usual" scenario, in which municipalities are competing with each other to attract economic development. In this scenario, State resources are not focused to specific priority areas. Development decisions are responsive to land cost and local economic development incentives. This approach is based on the estimates for jobs and housing applied to all of the 70 locally identified PDAs. Further, it assumes that municipalities as well as the State continue to advance policies, investments, and incentives that support growth across all of the local priority areas, without consideration for regional or broader scale opportunities or consequences. The result of this fragmented, Distributed Growth approach is that new growth occurs on both developed and undeveloped sites scattered throughout the region. Additionally, the 590 new jobs we project that the region will realize by 2035 will be distributed in some manner across all 70 PDAs and PDAs/PPAs and perhaps elsewhere; consequently, we can expect that none of the development areas' full capacities is maximized.

CMRPC estimated that the number of vehicle trips that will begin and end in the Rural -11 Region will grow by 23% from 2010 to 2035, while the number of trips that begin in the Rural-11 Region and end elsewhere will grow by 19% over the same time period. As a result of this increasing VMT, congestion is also likely, a concern that was voiced in the public meetings given the regions' nearly exclusive dependence on the personal vehicle.

In addition, as was expressed at the local and regional public meetings, vehicle trips being made are occurring on more congested roadways. During peak travel periods, particularly the morning and evening commute times, various meeting participants noted an increase in congestion at key intersections and on the region's heavily traveled corridors.

| Program Year | Project | Program | Projected Cost |
|---|---|---|---|
| 2014 | Barre Town Common Improvements | Surface Transportation Improvements (STP) | $2,339,000 |
| 2015 | Warren Resurfacing & Intersection Improvements at Route 67 & Route 19 (Warren Town Center) | STP | $1,838,720 |

| Program Year | Project | Program | Projected Cost |
|---|---|---|---|
| 2015 | Warren Resurfacing & Related Works on Route 67 and West Warren and Warren Town Center | STP | $1,686,880 |
| 2016 | Brookfield Reconstruction of Route 148 (Fiskdale Road) from Molasses Hill Road to Sturbridge Town Line including Webber Road | STP | $2,798,099 |
| 2016 | West Brookfield Reconstruction on Route 9, Route 67 and Intersections at School Street | STP | $1,725,152 |
| 2016 | West Brookfield Bridge Replacement W19.008 Wickaboag Valley Road over Sucker Brook | Bridge Projects | $2,376,648 |
| 2016 | Rutland Bridge Superstructure Replacement R.14.004 Intervale Road Over East Branch of Ware River | Bridge Projects | $1,814,400 |
| 2016 | West Brookfield, Brookfield Resurfacing and Related Work on Route 9 | National Highway System (NHS) | $1,994,181 |
| 2017 | none | | |

**Figure 24 -The current Transportation Improvement Plan (TIP) includes these projects in the Rural-11 Region**

There are no planned roadway projects in the Rural-11 Region that will increase roadway capacity. While these projects make spot and safety improvements on the region's highways, they are not capacity projects. Therefore, the estimate of roadway and travel impacts from employment and housing changes is straightforward. The highest percentage of new vehicle trips are logically anticipated to be along Routes 9, 122, 122A, 148, and 68 which represent the primary transportation corridors in the Region. Routes 19, 32, 32A, 67, and 58 would hold lower volumes of traffic.

Further analysis of transportation model results and growth patterns suggest that the Distributed Growth approach does not represent a very sustainable future for the Rural-11 Region. With economic development scattered throughout the region, requests for infrastructure funding will quickly outpace available resources. Less developed areas that are currently uncongested will experience the largest increases in VMT and traffic congestion, resulting in increased demand for roadway improvements and expansion. Dispersed growth far from town centers means that the share of trips made by transit, walking, or biking, already minimal in this subregion, would likely diminish further, defeating the values of such opportunities and subjecting our historic neighborhoods and traditional patterns of development to further decline and lessened viability. Most new development would occur in locations not currently served by sewer infrastructure, resulting in demand for system extensions or creation of new wastewater treatments systems. Due to increased demand for roadway expansion and new wastewater infrastructure, less money would be available for maintenance and improvement of

infrastructure in existing job centers. Few of the locally identified PDAs would be built to their full capacity as a limited number of projected new jobs would be spread among the nearly 70 development areas. Additionally, with the overwhelming focus on commercial and industrial growth identified at the local level, few new housing opportunities would be developed near employment, shops, services, and transportation centers.

## 7. Regional Priorities

The alternative to distributed growth is termed Regional Priorities Growth approach which is a model where local communities identify their development and preservation priorities and infrastructure investment intended to support and enhance these sites is also identified. These sites undergo a review and selection process resulting in a set of regionally significant priorities that can be targeted for investment. With so many competing local priorities, the demand for state assistance will far outstrip available resources, and few areas will be developed to their full capacity, diminishing the return on public investment in infrastructure or tax incentives.

Locally-identified priorities were evaluated through a multi-tiered screening process to determine which of those local priorities also were of regional significance. The screening process was based on a number of criteria associated with the state's Smart Growth principles[14], as well as the six fundamental principles that formed the basis for this study[15]. By performing his additional assessment, we can readily identify those local priorities that are also aligned with regional and state priorities for development, preservation, and infrastructure investment. Although this screening process was used to highlight specific areas as regionally significant, the local priorities identified for development and preservation are recorded on local maps created through this study (**Appendix D**). CMRPC did not alter or modify the local priority areas.

### Process

The regional screening process was performed through a series of steps that utilized multiple sources of data and public input. The public input that informed the screening was based on information and comments provided by municipal staff and community meetings, participants at the June 2013 Forum in New Braintree (including comments submitted following the forum), and discussions with select development and preservation professionals .

### First Round of Review

The first step in the regional screening involved an analysis of each of the 234 locally identified priority areas using available Geographic Information System (GIS) data. More than 40 GIS data layers in six general categories were used for this first phase of review. The criteria are listed by category in Figure 25, which identified some of the data that was evaluated in each category. A comprehensive listing of these criteria and their sources are included in **Appendix E** for reference.

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14 http://www.mass.gov/envir/smart_growth_toolkit/pdf/patrick-principles.pdf
15 See page 13 of this report.

| Land Use | Environmental Resources |
|---|---|
| Developed Land<br>Housing<br>Chapter 40R, 43D and Economic Growth Districts | BioMAP 2<br>Wetlands<br>Floodplains<br>Impaired Streams |

| Environmental Justice | Water Resources |
|---|---|
| Populations meeting Environmental Justice Criteria (e.g., income, minority population, etc.) | Wellheads<br>Aquifers<br>Surface Water Supply Protection Areas |

| Transportation Resources | Agricultural and Historic Resources |
|---|---|
| Sidewalks, Shared Use and Bicycling Facilities and Trails<br>Transit<br>Roadways and Interchanges | Farms<br>Prime Agricultural Soils<br>Historic Areas |

**Figure 25 -  Regional Screening Criteria by category**

Each of the locally identified priority areas was evaluated to determine its location relative to the criteria. For example, this evaluation provided information about how a development area was situated relative to historic areas, sidewalks, housing, critical environmental areas, and drinking water sources. Similarly, with a preservation area, the evaluation provided data about whether or not the area included such features as wetlands, waters of state significance or prime soils for farms. The result was a consistent set of information on which subsequent review and analysis was based.

## Second Round of Review

Using the information from the first round of review, we continued to evaluate which locally identified PDAs and PPAs were also regionally significant.  Through this stage of the process, a series of guiding themes became evident and were used to supplement information provided during the first review round. These themes were:

- <u>Villages and town centers</u> provide opportunity for housing and employment in areas with existing infrastructure and access to transportation corridors.  Although possibly not regionally significant individually, villages and town centers collectively represent cultural, historical and economic values of significance and provide the chance to meet shared needs, like affordable housing, in the region. Because of the historical building and environmental patterns they represent, and the opportunities they offer, many of these centers may be considered priorities for development, as well as for preservation.

- <u>Redevelopment, infill, and adaptive re-use</u> projects fulfill the goals of sustainable development, but also help to bolster the history of this region.  Given their importance as commercial and housing opportunities, as well as maintaining the industrial/historical fabric of the region in the former mill, areas that contained significant redevelopment opportunities, particularly mill redevelopment, were carried through as being regionally significant.

- <u>Industrial development and manufacturing</u> are part of the foundation of the Massachusetts economy.  Development areas that focused on industrial development to provide employment to the region's residents were a key part of the list of regional priorities.

- <u>Areas that include or propose housing</u> as an element in their development reflect both a principle in the study (i.e., a clear need for workforce housing) and the understanding of the projected demand for housing in the Rural-11 Region. The opportunity for housing was not a sole determinant, but the inclusion of housing was a key consideration in determining regional significance of PDAs.

- Collectively, <u>farmland and working farms</u> are viewed as forming a Regional Industry Cluster (RIC). Working farms and farms with prime agricultural soils constitute an important component of the regional and statewide economy.  Since they also ensure that land is not paved or developed in other more intense manners, they are considered a regional priority for preservation. PPAs identified with working farms were carried through as being regionally significant. Also see the Section on Working landscapes and the potential they represent to the region with regard to preservation and economy.

- For Preservation Areas, <u>connectivity</u> is essential. The screening looked at how PPAs would form connections between existing protected open spaces, habitats and clusters of identified PPAs, and at how preservation areas could facilitate local and regional trail connections and other initiatives.

- <u>Multi-town regional trails</u> are critical pieces of the Rural-11 landscape, both from cultural/historical and transportation/recreation standpoints.  These trails were each carried through as regionally significant:  the Mass Central Rail Trail, the Mid-state Trail, and the Ware River Rail Trail.

It is through this process that the locally identified priority areas were evaluated. Based on the first and second round reviews, as well as additional input particularly from partners, municipalities and local leaders, it is possible to identify those locally-articulated priorities which accordingly are also regionally significant.

## 8. Regionally Significant Priority Areas

The second round regional screening process resulted in the identification of 29 regionally significant Priority Development Areas (PDAs), 82 regionally significant Priority Preservation areas (PPAs), and two adjacent PPA/PDAs.

Figure 26 is a map of the priorities for development and for preservation that were determined to be Regionally Significant. A more detailed version of the map with corresponding identification table is provided in **Appendix F**.
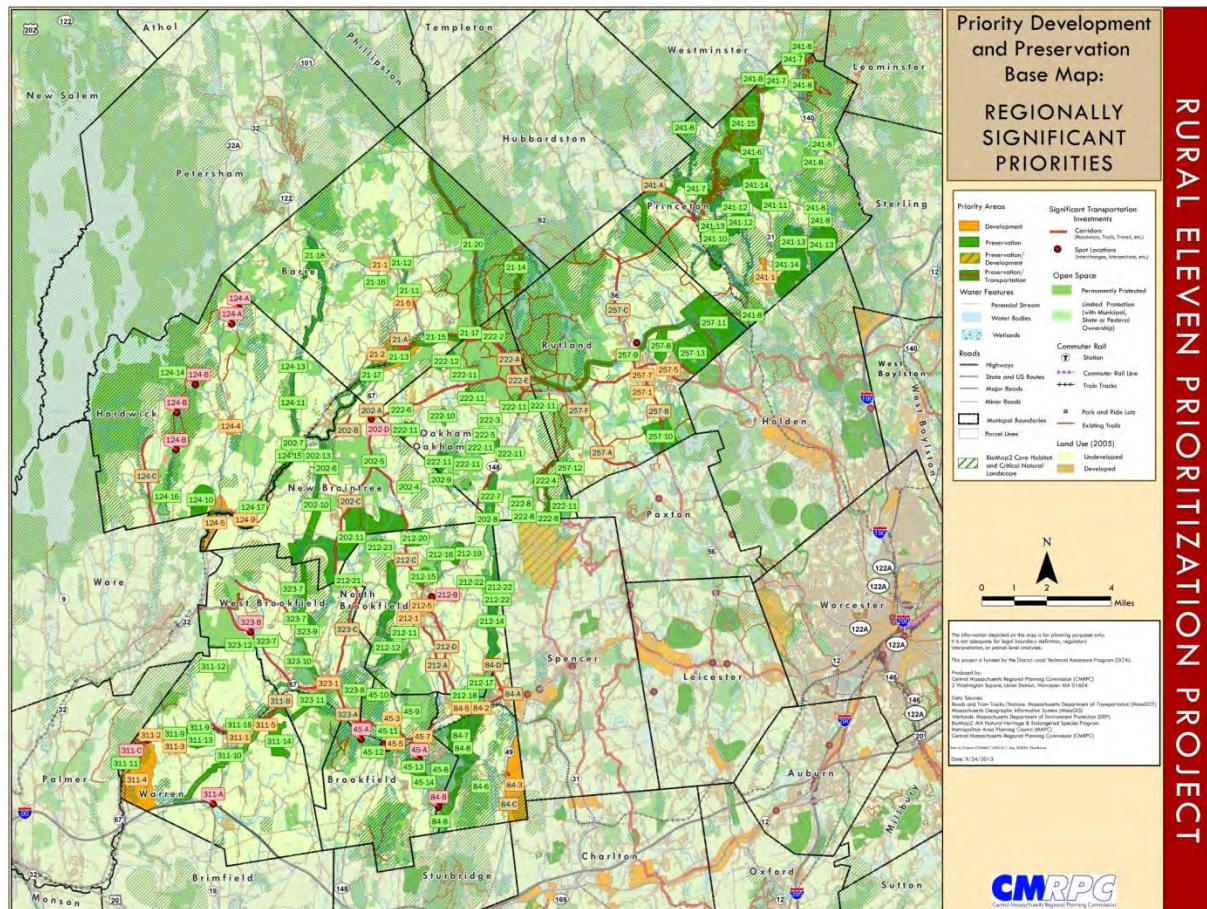


**Figure 26 - Overview Map of the Regionally Significant Priority Areas**

## Priority Development Areas

A total of 29 regionally significant PDAs were identified and selected from the 68 locally identified PDAs. These PDAs totaled 3,904 acres of land area with sites ranging in size from 0.34 acres to 1,195 acres and an average of size of 134.6 acres. The composition of general land uses in these regionally-significant development areas is presented in Figure 27. Of particular note is the fact that the amount of undevelopable vacant land designated in regionally-significant PDA's is very similar to that of what was identified locally.
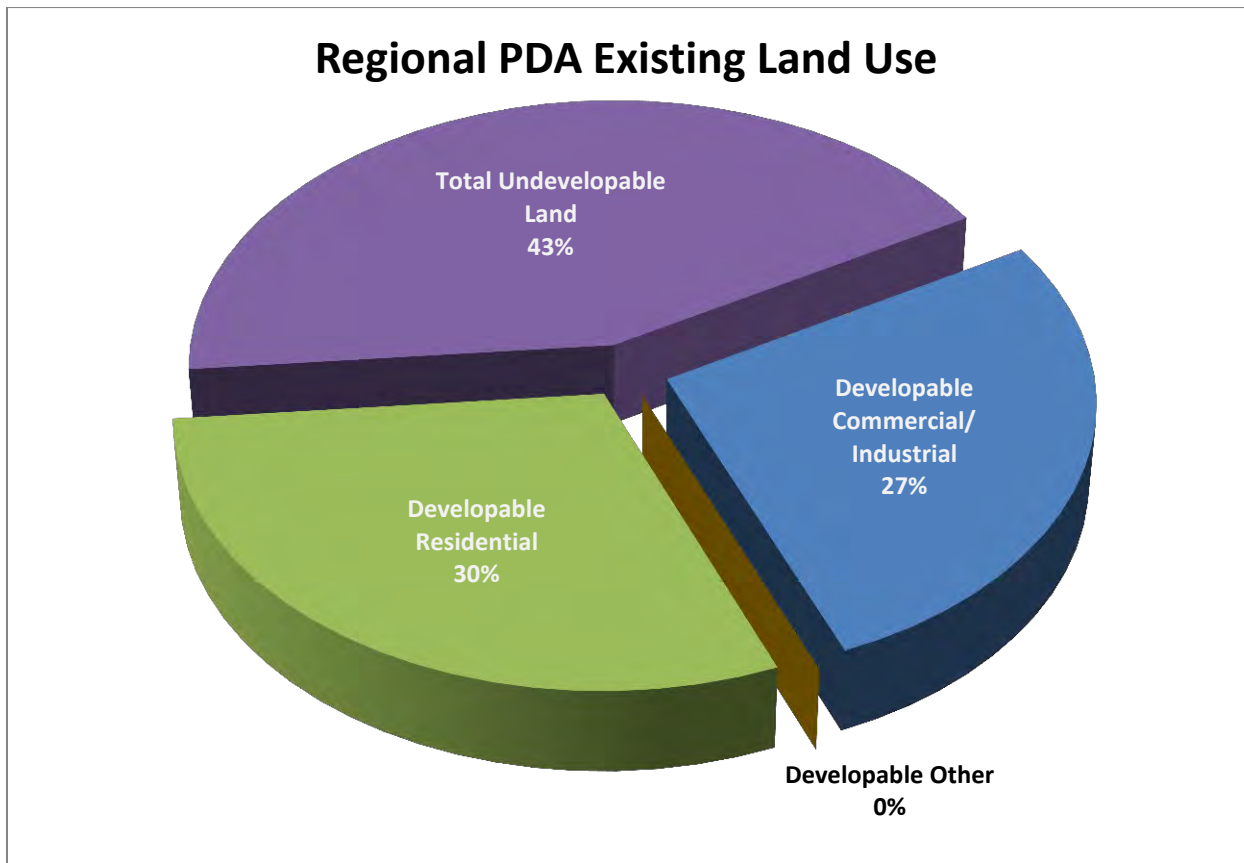


**Figure 27 - Existing Land Uses in Regionally Significant PDAs (%)**

The regionally significant development areas include approximately 84% of the acreage contained in locally-identified development areas.

## Priority Preservation Areas

The regionally significant PPAs include 82 areas culled from the 92 PPAs that contain over 16,000 acres. The 82 PPAs are made up of separate locally-identified PPAs, including several parcels identified for Biohabitat protection, regional trails, and heritage landscape sites. The regional preservation priority areas represent approximately 90% of the locally identified PPAs. The regionally significant PPAs have an average size of 230 acres, and vary between over 1,000 acres and 2 acres. These regionally-significant preservation areas include:

- 63 include priority or core habitat areas;
- 42 include water resource protection areas; and
- 12 farms from the heritage landscape inventories.

## Development Characteristics and Capacity

The potential development capacity was estimated for the regionally significant PDAs in the same manner as was done with the locally identified PDAs. Basing the capacity estimate on similar information (e.g., land use, employment, zoning, etc.), the regionally-significant development areas were calculated to have a build-out capacity of 25,400 additional jobs. Of course, this ultimate build-out capacity is still higher than the projected 4,780 additional jobs we estimate to be available by 2035, but represents a reduction of nearly 10,000 jobs from the capacity of all the local development areas.

For housing, the regionally significant PDAs were estimated to have a capacity for an additional 400 housing units, which still presents a significant gap between estimated housing production and the projected housing demand of 10,500 new housing units in the Rural-11 Region. The issue of housing, its relationship to projected employment opportunities, and its role in supporting future growth is given specific attention in Section 10, Housing Gap.

## Regional Priorities Growth Approach: A Preferred Alternative

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**Strategy 2:** Select regionally significant priority areas (PDAs and PPAs) from the local priorities based on the principles described herein.

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In order to evaluate the benefits and impacts of focusing state investments and development efforts on the regionally significant PDAs, CMRPC considered an alternative regional approach to the Distributed Growth approach described above. As noted above, this alternative "Regional Priorities" approach

anticipates that investments, policies, and local zoning are all oriented toward focusing growth into the Regional PDAs, while also discouraging unplanned development in other locations that is inconsistent with the Commonwealth's Sustainable Development Principles and with the themes identified earlier in this section. As a result, while some job growth will likely occur in other areas, it is assumed that a majority of job growth occurs in the regionally significant PDAs.

This Regional Priorities approach relies on the same new job growth estimates applied to the Distributed Growth approach, and the same employment and population data, as well.

As stated previously, the Rural-11 Region currently exhibits a fairly dispersed development pattern with a few exceptions. Key growth areas and centers are limited but include Routes 9 and 122A (which are also multi-municipal), the village centers, and the various industrial parks. Also, given the roadway network in the region, the direction of travel is similarly dispersed and not compact. Thus, when looking at 2035 projections, and assessing how best to strategically focus fewer than 600 jobs across eleven communities in a region, it becomes clear that greater capacity and efficiency is achieved when focusing on 31 regionally identified PDAs rather than 68 locally identified PDAs. This works to offset the existing dispersed pattern.

A number of benefits emerge from a strategic and more focused growth approach:

- Supports existing employment centers by prioritizing growth where jobs already exist,

- Leverages and protects previous infrastructure investments by utilizing existing systems and focusing limited resources to ensure their integrity,

- Reduces the need for new infrastructure extensions through the reduction of sprawl policies,

- Increases potential for improved circulation through higher employment and housing densities in these defined areas,

- Capitalizes on multi-municipal areas by providing opportunity where otherwise fragmented approaches would make development more challenging, and

- Ensures an efficient use of resources by focusing on redevelopment and infill, thereby preserving the natural, historical, cultural and heritage landscapes that exist in the region

As was seen in other similar regional prioritization studies, the transportation impacts of the Regional Priorities Growth approach are quite different from the Distributed Growth approach. In the Regional

Priorities Growth approach it is anticipated that, across large portions of the Rural-11 Region, there will be fewer new trips produced or attracted than in the Distributed Growth scenario. The areas within the region with increased trip generation/attraction are generally those that contain a Regionally Significant PDA.

Where concentrations of development and increasing congestion do result, the Regional Priorities Growth approach can create conditions more conducive to public transportation use and other alternative modes such as pedestrian and bicycle use. A standard transportation and regional planning goal throughout the CMRPC region is to increase development in areas where average trip lengths are shorter so that more trips can be made by walking or biking. It is likely that pedestrian and bike improvements, as well as more compact urban-like design, can drive those numbers up significantly within and near the regional PDAs.

The Regional Priorities approach is a more sustainable approach to development that supports existing employment centers by prioritizing growth where jobs already exist. Further, the focus of the regional approach on existing job centers would protect and encourage maintenance of previous infrastructure investments. By reducing expansion into undeveloped areas, this approach would also reduce the need for new infrastructure extensions, take advantage of infrastructure that may have existing available capacity, and limit the extent of short- and long-term operation, maintenance and repair needs. In addition, as more growth is located in areas served by transit, or with the potential to be served by transit, the Regional Priorities Growth approach increases transportation choice for workers and residents, which in turn reduces roadway congestion, reduces greenhouse gas emissions, and reduces commute efforts. Thus, this approach was the chosen methodology for the selection of PDS, PPAs, and PIIs in the study area.

## 9.  Housing Gap

As discussed earlier in this report, a need for more housing units is projected in the Rural-11 under either growth approach.  Therefore, planning for the development of more housing units is needed in this region.  This gap is the result of numerous areas being identified for commercial and industrial uses and fewer areas identified to include residential uses. Of the identified local Priority Development Areas, only five (5) areas were identified for housing purposes. The reduced number of areas identified with residential uses is understandable given the existing property tax structure and the perceived property tax implications of residential uses, the desire to limit growth to protect "rural character", and the limits on water and sewer infrastructure.  However, there are significant consequences related to transportation and economic competitiveness that will arise if housing unit growth fails to keep pace with job growth.

If housing choice in the study area remains limited due to low or no housing growth, it will create a system where an increased number of workers will need to find transportation into the Rural-11 Region for jobs and other needs. This will be especially true under a scenario that would distribute jobs in a disparate manner across the study area. It would reinforce the need for single occupant vehicles (private automobiles) to commute which would likely contribute to increased traffic congestion, reduce the potential for alternate modes of travel, and reduce the opportunity for moderate- and low-income people to connect to places of employment. Additional impacts of an overdependence on the private car could include increased air pollution and associated air quality reduction, climate impacts, and stormwater impacts.

With this housing gap, there is reduced ability to meet both affordable and workforce housing needs in the Region.  As indicated in the existing conditions section of this report, a large number of Rural-11 households are housing cost burdened. This means that they are paying more than 30% of their household income on housing costs.  There is a critical need for more housing generally and more affordable housing specifically in the region.  One indicator of a town's affordable housing inventory is its Subsidized Housing Inventory (SHI).  As of April 2013, no Rural-11 municipality had a Subsidized Housing Inventory (SHI), as defined by MGL Chapter 40B, of 10% or more, which is the minimum required to preclude state authority over appeals to affordable projects.  North Brookfield had the largest SHI inventory at 7.1%.  Three communities, East Brookfield, New Braintree and Oakham, have no

SHI units[16]. Coupled with the fact that no communities in the Rural-11 Region have current Housing Production Plans, most municipalities in the Region are unlikely to achieve MGL Chapter 40B housing production goals in the near future. These tools are critical to providing affordable housing choices but if they are developed outside of the municipal planning processes, there is less likelihood that projects will be developed according to local goals and plans. This may include less or no attention to criteria such as sustainable development principles, infrastructure capacity, and natural resource constraints.

| Community | Census 2010 Year Round Housing Units | Subsidized Housing Units (SHI) | Percentage |
|---|---|---|---|
| Barre | 2,164 | 78 | 3.6% |
| Brookfield | 1,452 | 41 | 2.8% |
| East Brookfield | 888 | 0 | 0% |
| Hardwick | 1,185 | 32 | 2.7% |
| New Braintree | 386 | 0 | 0% |
| North Brookfield | 2,014 | 142 | 7.1% |
| Oakham | 702 | 0 | 0% |
| Princeton | 1,324 | 20 | 1.5% |
| Rutland | 2,913 | 81 | 2.8% |
| Warren | 2,202 | 107 | 4.9% |
| West Brookfield | 1,578 | 61 | 3.9% |

**Figure 28 - DHCD Chapter 40B Subsidized Housing Inventory (SHI) April 30, 2013**

An element of the region's housing gap is limited housing diversity. As shown in the Community Characteristics portion of Section 3, the majority of housing in the region is single-family homes, and there are considerably fewer opportunities for those seeking other housing types. It is predicted that these other housing types – duplexes, multi-family units, and condominiums – will need to be provided in order to meet changing demands of recent generations and newly expected housing preferences of baby boomers. By broadening the housing types available, there is the potential to address changing needs as well as to offer more rental housing opportunities, especially for those facing the possibility of a high housing cost burden. However, such alternative housing opportunities should fit the characteristics and development patterns of theRural-11 Region. The Rural-11 Region patterns differ from more urban and suburban communities within CMRPC's region.

Beyond subsidized housing, it is important to also consider market rate housing. Many parts of the state essentially rely on Chapter 40B housing to balance the high cost of market rate housing for families earning 80% or less of median income. However, what we are seeing in the Rural-11 Region is that

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*16 MA Department of Housing and Community Development Chapter 40B Subsidized Housing Inventory as of June 30, 2011.*

median sales prices of homes throughout the region are, for the most part, affordable.  As Figure 26 shows, based on total sales in 2012, the median sales price in each community was well below that of the state.  Although our research tells us that approximately 17% of households who own their homes are paying more than 30% of their income for housing costs, we see that there are some real opportunities in the Rural-11 Region to continue providing housing that is attainable to many.

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**Strategy 3:**  Develop plans, policies, and programs to ensure that sufficient housing of all types and prices are available to current and future residents of the region (otherwise referred to as a life cycle inventory or supply). This is a critical component of supporting and enhancing economic development opportunities such as the development of PDAs.

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| | Sales price | % change |
|---|---|---|
| Barre | $165,000 | 27.02 |
| Brookfield | $216,700 | 16.35 |
| East Brookfield | $161,850 | 6.13 |
| Hardwick | $200,000 | 45.45 |
| New Braintree | Not available | |
| North Brookfield | $167,400 | 39.5 |
| Oakham | $265,000 | 40.21 |
| Princeton | $315,000 | 24.02 |
| Rutland | $240,250 | 1.61 |
| Warren | $160,600 | 55.96 |
| West Brookfield | $175,000 | 6.06 |
| | | |
| **Median Sales Price** | **$207,625** | |

**Figure 29 - 2012 Median Home Sales Price (Warren Group)**

Four specific  (4) actions are recommended to carry out the strategy and reduce the projected housing gap:

1. <u>Identify Specific PDAs for Housing Development</u>:  An initial step would be to review the priority development areas that were particularly identified for only commercial and industrial uses and explore their potential for housing. Inclusion of housing in these locations would require balancing how commercial and residential uses are distributed and would be a major step towards accommodating housing in focused locations. Increasing the number of mixed use development areas to include both residential and commercial or industrial uses would also provide a broader base of customers to support retail businesses, restaurants and other local services.

2. A second action is to <u>focus on the provision of residential land uses in village and town centers</u>, where there is the potential to accommodate a greater number of units and housing types. These locations concentrate development and often include commercial uses. This action does not imply that each village and town center must equally take on the same levels of growth. It does however propose that different types of housing growth are appropriate relative to the size of the center and that a municipality may have the opportunity to make substantive progress toward expanding its affordable housing inventory.

3. A third action is to <u>diversify housing opportunities</u> to create more residential options, reduce development pressure on Priority Protection Areas and facilitate land conservation.  Low-density single-family residential developments that consume one (1) to two (2) acres or more of land per unit of housing are expensive both economically and environmentally, and they will likely not result in the number of units to help meet the housing needs of the region.  Alternative zoning options, such as Open Space Residential Design (OSRD) and Accessory Dwelling Units (ADU), can be applied to residential zones in suburban and rural areas to expand local housing choices and create more opportunities for workers in the Rural-11 Region. For example, OSRD provides for housing to be built in a more compact fashion on the least sensitive portions in a development area, while natural assets such as stream corridors, fields, and woodlands are protected and amenities and recreational opportunities are provided.  OSRD developments can also include a variety of housing types such as duplexes, condominiums, and multifamily housing. ADUs, mother-in-law suites, and other options more appropriate in a rural setting are more likely to be viable in the study area.

4. The fourth recommended action is to <u>focus housing in development areas with established access to corridors, in areas with transit access (East Brookfield or Brookfield) and/or in areas with  the potential to support transit service (Warren)</u>. Supporting housing creation in these areas increases the number of locations that have a "critical mass" of people sufficient to increase transportation choices through the support of transit service. Furthermore, housing near bus stops, park and ride facilities, or bike routes can reduce the housing-transportation cost burden for workers.  It can also provide more opportunity for seniors and others to stay engaged with their communities.

Although discussed separately, these actions overlap in how they relate to the priority development areas and equitable access to these opportunities for current and future residents of the Rural-11 Region. As these actions are advanced either individually or in combination, they will go a long way in meeting the principles that have guided the study (p. 9).

## 10. Significant Infrastructure Investments - Transportation Infrastructure

Following the identification of the regionally significant priority areas, CMRPC reviewed potential transportation challenges and opportunities in the study area. This review was used to develop a set of Regionally Significant Infrastructure Investments (Transportation) categories that would:

- Support the regionally significant PDAs

- Avoid adverse impacts to regionally significant PPAs

- Increase regional transportation choices

- Support reductions in greenhouse gas emissions as emphasized by the Global Warming Solutions Act and the GreenDOT initiative

Additionally, the context of existing fiscal limitations related to transportation funding and initiatives was considered in the development of the categories.

The development of the RSTIs was informed by statewide and regional planning documents as well as other transportation investments that were identified during local meetings in the municipalities and by officials and participants at the Regional Public Forum. The locally identified significant transportation investments are illustrated on the maps included in **Appendix D**. The investments are identified as either corridor investments (e.g., Roadways, Trails, Transit, etc.) or spot locations (Interchanges, Intersections, etc.).

The Regional SIIs are organized into the following investment categories along with highlighted projects that have the potential to address transportation needs in the Rural-11 Region:

### Category 1: Regional Trails

The Rural-11 is home to several significant regional trail systems: Mid-State Trail, Mass Central Rail Trail, Quaboag River Trail, Ware River Rail Trail (coincides with the International Snowmobile Trail) and the Old Bay Path Indian Trail.  This category includes the regional rail trails that were identified as significant infrastructure investments (SIIs) as preservation and transportation investments since some

represent commuting opportunities.   The Mid-State Trail, Ware River Rail Trail (coincides with the International Snowmobile Trail), Quaboag River Trail, and the Old Bay Path Indian Trail, though regional trails, were listed as PPAs because they are largely recreational trails and preservation along on the trail is of primary importance.

All eleven communities have at least one of these trails in their town.  In the study area, there exist numerous opportunities to develop the component parts of a regional bicycle and pedestrian network. These pieces would come from existing off-road paths and connect with on-road bicycle facilities and sidewalks. The creation of these network connections would include:

1.  Off-road shared use connections to town centers, transit stops and/or PDAs should be completed to provide increased non-motorized transportation options.

    - The Mass Central Rail Trail would provide a shared use path connection between key transportation routes in between Barre and Holden.

    - A connection from the Ware River Rail Trail to the Mass Central Rail Trail provides access to the Towns of New Braintree and Hardwick.

2.  On-road bicycle facility and sidewalks enhancements that connect PDAs should be advanced to address 'last mile' connections.

## Category 2: Public Transit

All of the communities in the Rural-11, with the exception of Hardwick, are member of the Worcester Regional Transit Authority (WRTA). Only East Brookfield and Brookfield have fixed route service.

While the WRTA has fixed service to both East Brookfield and Brookfield, and many alluded to the desire for increased service, only the Town of Warren identified Public Transit as an Infrastructure Investment. Community leaders there felt that the Town of Warren would be an ideal location for a connecting hub that would create a bridge between the Pioneer Valley Transit Authority (PVTA) and the WRTA.  The PVTA currently has a shuttle that stops in Ware Center.  A hub in the Town of Warren would provide access to Warren's employment generating PDAs and WRTA's stops to the East and PVTA stops to the West. From Ware Center to Warren Center via Route 9 and Route 67 is 8.1 miles.  From Warren Center to Brookfield Center is 6.4 miles via Route 67 and Route 9.   This category supports and reinforces the role of the public transit in

reducing vehicle miles traveled, mitigating greenhouse gas emissions, and providing access to the region.

1. Opportunities for interconnections between the Rural-11 Region and neighboring large employment centers should be supported.  Work to create additional connections between the region and the City of Worcester provide more transportation choice within the region as well as to Boston and other larger cites both east and west of the region.

2. Additional routes that will provide transportation choice between PDAs should be considered.  Additional and more robust routes have the added benefit of congestion and volume reduction on the region's connector roads.

## Category 3: Interstate Highways

Interstate highways and their interchanges are key transportation assets that support existing and future developments; it is a priority to protect their condition and capacity.  Improvements to maintain these highways as a regional travel facility should focus on providing access to jobs and freight movement.  Many community leaders described the need to address access issues from the Rural - 11 region and the Massachusetts Turnpike.  The Turnpike passes only through the Town of Warren.  There are no connections from the Turnpike directly to any of the Rural-11 communities.  Connections for interstate travelers using the turnpike are made possible by using the Sturbridge toll and then travelling Route 20 to Route 148, Route 49 and/or Route 31.  Issues with Sturbridge Toll Plazas were a cause of concern among many who felt that travel to the region was deterred by the traffic and long delays at the Tolls.  Also periodically exit traffic becomes congested at the I-90 Exit 8 in Palmer because only three (3) toll booths are there to service vehicles.  Consequently visitors to the region may be discouraged again by the barriers to access the regions local highways.  Similarly, Route 122 from the Auburn/Worcester interchanges was described as difficult to navigate through Worcester and west.

1. Issues with congestion have been identified on I-90 in Sturbridge, Palmer and Auburn as well as the lack of a direct interstate connection between I-90 and MA State Routes 9, 49 and 148.  Solutions are likely very long term and costly.

2. Improved connection to the Turnpike could promote increased tourism to the region and could improve the flow of goods and services into and out the region.  In particular, better distribution of farm products would promote the Rural-11 economy.

**Category 4: Connector Roadways**

This category includes the local and sometimes numbered routes that serve multiple functions.   They are home to both local commercial development and residential uses, and they connect downtowns and village centers.  Route 122 from Paxton through Rutland, Oakham, and Barre continuing to Petersham, New Salem, and Orange has been designated as a National Scenic Byway.  Locally the Paxton to Petersham is referred to as the Lost Villages Scenic Byway.  The Scenic Byway has been the focus of increased marketing efforts to draw tourists to the area. They are also the most direct way to access regional highways, such as I-90 and Route 2.  Examples include Main Street in several communities, and Routes 9, 19, 31, 32, 56, 62, 67, 122, 122A, and 148. The challenge is to balance all of these needs on a road that is being asked to handle more through-traffic, local businesses, and homes – all at the same time – within a limited right-of-way.  Our studies have shown that downtown intersections throughout the region are areas of higher traffic volumes, increased crash locations, and deteriorated pavement conditions. Traffic flow in the Rural -11 communities only occasionally rises to the level of congestion seen in other more urbanized areas of the region. Many municipalities experience higher traffic volumes during peak commuting periods.  Exacerbating this situation is the fact that these routes serve local trips between commercial and residential uses. These routes would benefit from the following elements:



ROUTE 122
SCENIC BYWAY
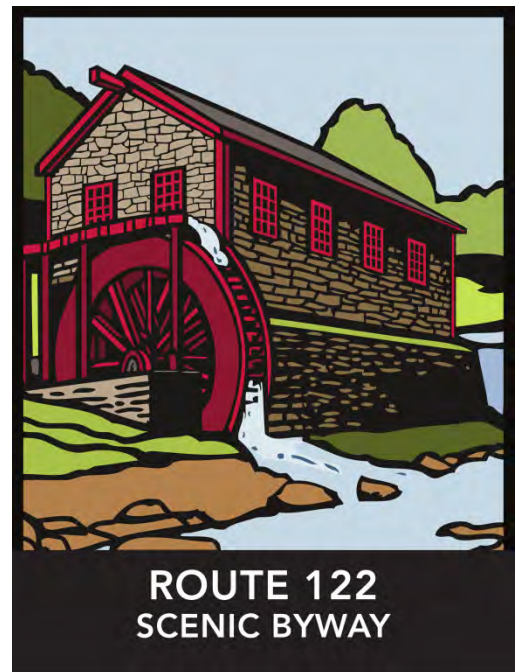
1. Signalization Improvements along all connector roadways.

2. Continued efforts to improve, market, and sustainably develop the Lost Villages Section of the Route of Route 122.

3. Access management is important. Multiple curb cuts on heavily-traveled numbered routes create congestion problems and travel delays.  Utilizing access management techniques and zoning for mixed uses will allow for the combination of curb cuts and better organize how

vehicles enter and exit connector roadway.

4. A 'Complete Streets' approach focuses on moving people, not just vehicles. A complete streets approach includes improvements to entire roadway corridor to best accommodate all modes of travel: vehicular, transit, pedestrian and bicycling.  By accommodating all travel modes, people will have transportation choices beyond the single-occupant vehicle and encourage active transportation.

## 11. Significant Infrastructure Investments - Additional Needs

### Water, Sewer, and Stormwater Infrastructure and Water Supply Protection

Infrastructure investments were cited by many towns as being critical to successful future development in the Rural-11 Region. In most cases, the limitations of drinking water and sanitary sewer systems were identified as significant impediments to achieving the full potential of identified PDAs. For example, of the 11 municipalities in the region, Barre, East Brookfield, Hardwick/Gilbertville, North Brookfield, Rutland, Warren and West Brookfield have public water suppliers. These public water supplies are typically limited to the village centers and do not service the entire community. The communities of Brookfield, Oakham, Princeton, and New Braintree are dependent largely on private water suppliers. (Figure 27).



**Figure 30 - Existing Infrastructure**

While growth is expected to bring an increase in demand for water and wastewater disposal, comprehensive management solutions can reduce or limit the amount of infrastructure enhancements and/or expansion that would be expected.  It is also critical to note the impact that water and wastewater infrastructure can have on the surrounding natural systems, particularly rivers and streams, since both pollutant discharges and withdrawals have been shown to affect ecosystems[17]. The key, not surprisingly, is balance.  People choose to live in this area for many reasons, one of which are the recreational opportunities that the area enjoys, and the value of those activities to the local economy. Sustainable water practices will increasingly depend on conservation and innovation throughout the region to ensure protection of both economic and environmental health.

The issue of water infrastructure in Massachusetts is of such importance that in 2009 the Legislature created the Water Infrastructure Finance Commission (WIFC).  The Commission is charged with developing a comprehensive, long-range water infrastructure finance plan for the Commonwealth and its municipalities.  Specifically, the Commission was charged to:  "examine the technical and financial feasibility of sustaining, integrating and expanding public water systems, conservation and efficiency programs, wastewater systems and storm water systems of municipalities and the Commonwealth, including regional or district systems."

According to the final WIFC report released in May 2012[18]: Clean water is perhaps our most precious commodity and assuredly our most recycled resource. Our water supplies, wastewater treatment, and storm water management practices protect our health, keeping us safe from deadly waterborne diseases. The availability of high quality water is an important consideration for many businesses, including life sciences and manufacturing. A high-pressure water system allows us to put out fires, and healthy rivers, lakes and wetlands free from pollution are critical for a thriving natural environment.

Yet despite its importance, our aging water infrastructure system suffers from a lack of investment, delayed maintenance, and insufficient resources. Hundreds of miles of pipes are kept in service long past their useful life, leading to lost water and sewage through underground leaks and, in the worst case, water main breaks (referred to as "inflow and infiltration" or "i/i") that can leave thousands of families without water for days or even weeks. Many municipal treatment plants are in need of updating to meet current public health and environmental guidelines. Like the homeowner who postpones repairs until the roof leaks, we jeopardize our water services when we fail to maintain and upgrade our

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17  **Armstrong, D.S., Richards, T.A., and Levin, S.B., 2011, Factors influencing riverine fish assemblages in Massachusetts: U.S. Geological Survey Scientific-Investigations Report 2011–5193, 58p. (Also available at http://pubs.usgs.gov/sir/2011/5193).**

18 **Water Infrastructure Finance Commission, Massachusetts's Water Infrastructure: Toward Financial Sustainability, February 7, 2012**

existing infrastructure. Our drinking water, wastewater and stormwater infrastructure need increased investment if they are going to continue to deliver reliable clean water and keep wastes and toxic chemicals out of our environment without service interruptions.

Further, in her Inaugural speech on January 2, 2013, Massachusetts Senate President Therese Murray said: "In addition to transportation, we also need to address drinking water and wastewater reform. In the Fiscal Year 2010 budget, the Senate included the formation of the Water Infrastructure Finance Commission, which published its final report in 2012 after two years of hard work. The Commission concluded that we are facing a collective gap of approximately $10.2 billion over the next twenty years in funding for drinking water and a gap of $11.2 billion over the next twenty years in funding for wastewater… We look forward to working with the Department of Environmental Protection, cities and towns and the public or private water utilities to build a comprehensive proposal that secures our water future."

In November 2013, Representative Anne Gobi announced a $500 million water infrastructure and drinking water bill (Bill S 1947) was released favorably from committee. The comprehensive bill proposes reforms and commitments to assist small communities and enhance state water and wastewater infrastructure challenges and to promote innovative water management pilot projects as well as green infrastructure projects.[19]

## Water Supply

Drinking water in the Rural-11 Region is provided and distributed through multiple sources, including municipal water districts and private wells.

Water withdrawals are regulated by the Massachusetts Department of Environmental Protection (DEP) under the authority of the Water Management Act (WMA). Thus, new or increased municipal water supplies require permits and the reporting of water use data to DEP. Overall, growth projections used for these permitting and reporting purposes typically assume population expansion of approximately one percent per year, with an accompanying growth in employment population of one-half of one percent. This growth will put increasing pressure on local water systems. While water is a relatively abundant resource in Massachusetts, it is a limited natural resource nonetheless. The Town of North Brookfield currently exceeds the Unaccounted for Water Standard of 10% with 19.30% UAW. And Rutland currently exceeds the water conservation standard of 65 residential gallons per capita per day (rgpcd) with 80 rgpcd. Five (5) communities with public water supplies expect to see an increase in water use for a total increase of 0.443 mgd in the region (an increase of 46.22%). Only Barre is expected

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19 https://malegislature.gov/Bills/188/Senate/S1947

to see a decrease. Rutland's projected total demand is estimated to be higher than current allocations allow.

In addition to the quantity of water that is available to public systems, a critical asset (or constraint) of any water supply system is the infrastructure of pipes and pumps that is used to distribute the water. So, in addition to considering supply, a discussion of municipal water supply adequacy must also consider the condition and capacity of the distribution system.

Policies and regulations guiding the enforcement of the Water Management Act established a water conservation standard of 65 residential gallons per capita day (rgpcd) for water consumption or use. Figure 28, below, shows 2010 water use, by community, and then makes projections for water demand in 2035 based on current trends (shown in green) and based on the conservation-based goal of 65 rgpcd (shown in red). It is noteworthy that many communities are using less than 65 gallons per person per day, showing that communities in the region are conserving water in a sustainable manner.
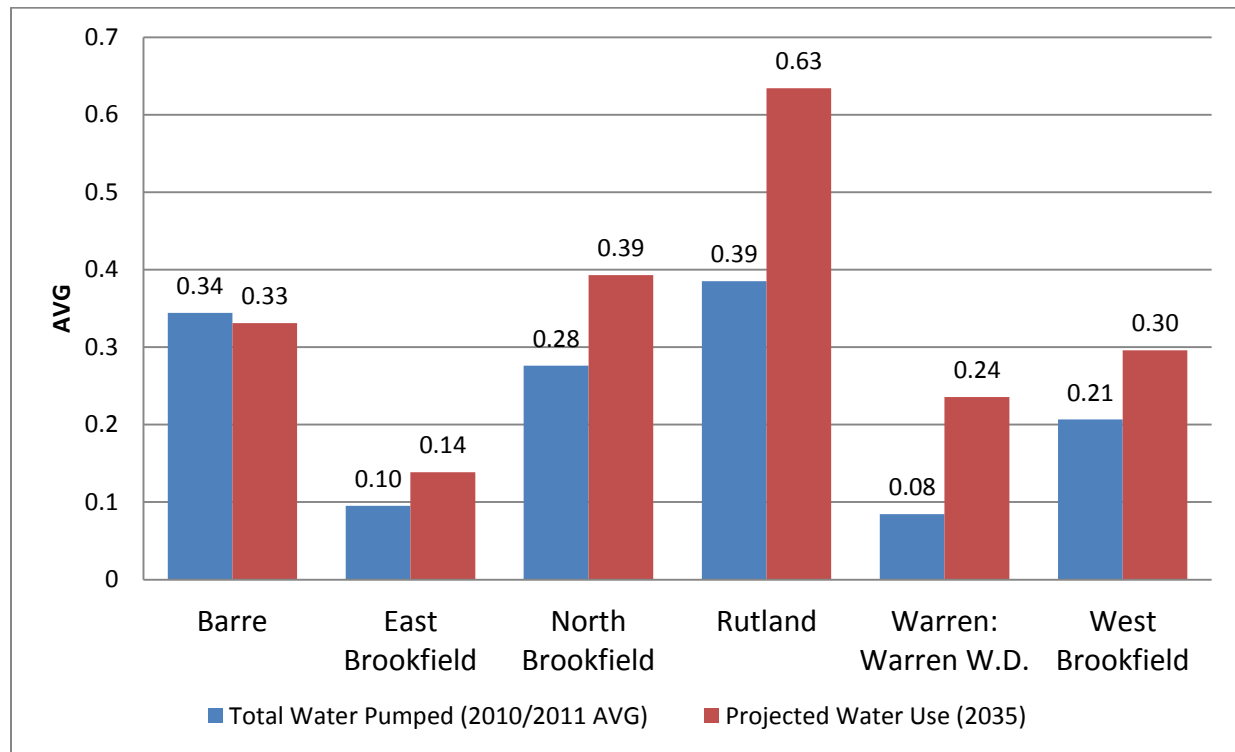


**Figure 31 - Change in Water Use - A Comparison of 2035 Compact Projections versus Recent Use. (EOEEA)**

The information provided offers a rough analysis of the potential impact of population changes in the identified communities on water and wastewater issues. Experience indicates that there is not always a direct link between population and/or economic growth and increased water demand. While these

projections are intended to inform, they are subject to change based on actual growth patterns, improving water use efficiency, and the types of businesses that develop in an area. In fact, the old adage usually holds true: Conservation Works. In many cases, if conservation measures are put into place, the new capacity needed can be found.

As communities seek expanded authorization through permits for additional water supplies, they will also need to continue to ensure a stable and sustainable water supply for future generations as well as for long-term ecologic health. In November 2012, the final framework of Massachusetts Sustainable Water Management Initiative (SWMI), an initiative focused on the development on a water allocation program that satisfies both ecological and human water needs, was released. Starting in 2014, the framework will guide Mass DEP's permitting of water withdrawals under the Water Management Act. Before making requests for additional groundwater withdrawals, local communities will first need to demonstrate that minimization strategies, including demand management, will have been implemented. In areas where withdrawals have had a significant impact on stream flow (as measured by August alteration), mitigation of impacts through ecological restoration may also be sought.
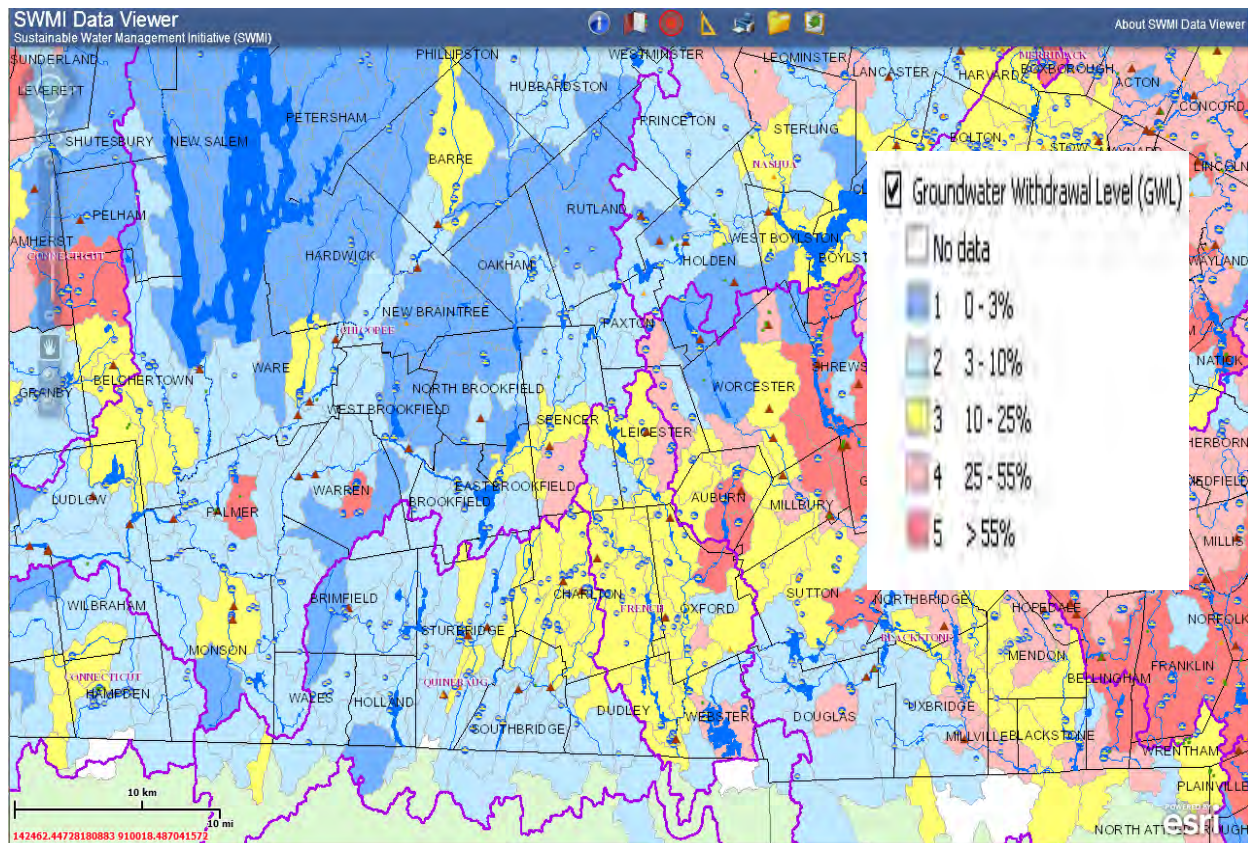
**Figure 32 - Groundwater Withdrawal Levels as a Percent of August median flow alteration.**[20]

Figure 32 illustrates groundwater withdrawal levels as a percent of August median flow alteration. This is natural stream flow alteration that occurs in August as related to groundwater withdrawals in the Rural-11 watersheds (Chicopee River, Blackstone River, and Nashua River) and some surrounding communities.  Groundwater withdrawal affects streams.  August stream flow is measured because the summer period represents the highest demand for water and the lowest availability of water due to the dry weather.  With the larger amount of flow alteration, there will be a greater impact on the stream and biologic processes. Areas identified by pink and red indicate significant withdrawal levels. What is evident is that many of the Rural-11 communities are between 0% and 3% levels, with some areas much higher than that including Warren Village and Barre.  These higher withdrawal areas that exceed 10% are potentially subject to mitigation requirements, such as withdrawal reductions during times of low stream flow, outdoor water use restrictions, installation of water meters, and leak assessment.

Sufficient supply may not always be available to meet demand unless strategies are adopted to ensure sustainable water management.  Improved conservation efforts and innovative technologies can

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20 http://www.mass.gov/dep/water/resources/swmi.html

significantly reduce future projected water demand.  As stated above, many Massachusetts cities and towns withdraw their water from local surface water supplies or from shallow sand and gravel aquifers that tend to have less flow or storage during summer months.  Meanwhile, people use the most water during dry summer months, when demand for irrigation and other outdoor uses is highest.  In June, July, August, and September, residential water demand generally increases by 50% due to outdoor water use.[21]  This means that water supply systems are being made to withdraw more water at precisely the time of year when aquifers and surface water supplies are least able to provide that extra supply and when aquatic habitat is most stressed.  Curtailing non-essential use, and requiring innovative solutions such as treatment on-site and recycling of water for non-potable uses, could significantly reduce future demand increases as well as treatment and distribution costs to public water suppliers.  Through the reuse of wastewater, flows to wastewater treatment facilities could also be reduced (see below).

## Wastewater

An equally important issue in the Rural-11 Region is wastewater treatment and sewer infrastructure.  Providing adequate wastewater treatment for large-scale economic development while protecting the environment is a challenge whether one is pursuing decentralized treatment or addressing ongoing maintenance, reduction of inflow and infiltration, or expansion of sewer infrastructure to service anticipated growth.

The Spencer Wastewater Treatment plant was identified as a cause of concern that might be affecting water resources in Brookfield and East Brookfield.

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[21] *Summer Smart Water Use: A Guide to Peak Season Water Demand Management, Metropolitan Area Planning Council and the 495/MetroWest Corridor Partnership (formerly Arc of Innovation 495/MetroWest Corridor), May 2006.*

**Figure 33 – Spencer Waste Water treatment facility (Google Earth https://www.google.com/maps/preview, accessed December 26, 2013)**

Community leaders from nearby communities were concerned about the impact of effluent from the treatment plant on nearby water bodies and water supplies.

Most of the municipalities in the Rural-11 Region have either limited municipal district sewer, which may cover only a portion, often very small, of the town, or have no public sewer system at all. The Towns of Brookfield, Oakham, Princeton, Hardwick and New Braintree are almost entirely reliant on private septic systems for waste water.

A lack of public sanitary sewer constrains development since the cost of designing, constructing and maintaining an on-site facility for a large-scale development significantly impacts a development pro-forma, and may make site development cost-prohibitive.  However, large scale regional systems are not always the best or most cost-effective solutions.  Decentralized treatment facilities may offer unique solutions to development within designated PDAs.

The forecasted increases in water demand discussed above are likely to result in corresponding increases in wastewater demand should current wastewater management practices continue.

In addition to potential flow demand, publicly-owned treatment works seeking federal National Pollutant Discharge Elimination System (NPDES) permits[22] would have to meet Clean Water Act anti-degradation provisions prior to receiving a permit for any increase in discharge flow to water bodies. Generally, this means that the pollutant loads currently generated cannot be increased and any additional discharges would need to fall within these current pollutant loads. This can be an expensive treatment process.

However, groundwater discharge is a viable alternative. GIS analysis completed by EOEEA can identify areas where groundwater discharges may be suitable and communities should consider protecting these lands for potential use in the future. In recent years financial assistance has been available from the EOEEA Division of Conservation Services to help communities purchase land for this purpose. Localized on-site treatment and water re-use are two additional alternatives that could significantly decrease the need for wastewater disposal capacity while providing a supply of water for non-potable uses. We have already discussed the water saving benefit of on-site treatment, and now must consider the added benefit of reducing new flows to the wastewater treatment systems.

Under the growth scenarios, pressure on capacity during storm events will only increase. Continued diligence in addressing inflow and infiltration[23] issues must be maintained so that the projected increase in demand on systems from legitimate waste sources can be absorbed by existing infrastructure and permit limits. Additional work addressing combined sewer overflows (CSOs) must also continue.

Water and wastewater infrastructure in the Rural-11 Region, key elements in promoting strategic economic development, are largely localized rather than being part of a regional or metropolitan system. Municipalities, in combination with private entities, are largely responsible for the construction of this infrastructure. Municipalities, the region, and the state should continue to think about how wastewater infrastructure should be planned, financed, and pursued over the next 20 years. However, these challenges also present opportunities for new approaches and technologies through which Massachusetts can again provide leadership for others to emulate.

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[22] *See EPA's NPDES webpage: http://cfpub.epa.gov/npdes/home.cfm?program_id=45*
[23] *Excess water that flows into sewer pipes from groundwater and stormwater is called infiltration and inflow, or I/I. Most I/I is caused by aging infrastructure that needs maintenance or replacement.*

## Project Example – a Success Story in Oxford, Dudley, and Webster

One example of a success story with respect to wastewater infrastructure is a sewer extension project in Oxford, Dudley, and Webster.   Oxford, with support from the towns of Dudley and Webster, will use $2.2 million in MassWorks funds from a successful 2012 grant to install a sewer extension to open previously developed and undeveloped areas for economic development and growth.

There are currently three large light industrial employers, including IPG Photonics (a maker of high-power lasers), along the proposed sewer route in Oxford that will benefit from having a public sewer, as the space currently occupied for on-site treatment would become area available for expansion.  In addition to the current businesses, the new sewer opens up more than 50 acres of land that is also zoned for light industrial development.  This sewer extension allows IPG Photonics to move forward with a planned $18 million expansion that will result in 175 new high-paying jobs in the region.

The project will extend 3,300 feet of gravity sewer in Oxford and 4,400 feet of force main in Dudley and Webster and will include a new pumping station. As part of the project, the businesses in the vicinity of this project collectively pledged $100,000 to advance the design of the sewer project before the MassWorks funds became available.

### Water Sewer Infrastructure Mapping

The reality of localized infrastructure consequently translates into localized infrastructure mapping. Absent a centralized or regional system for water and/or sewer, each community handles this infrastructure on their own.  This means that, while system maps are usually available from communities, it is not always the case.  Their availability depends upon the technology in the town, the staff capacity to create and maintain the information, and whether or not they have mapping in a format that is useful to others or are willing to share it. Typically, information is received and assembled during a specific project, such as an open space and recreation plan or master plan or development review.   Because this kind of analysis is on a case-by-case basis, there is not a central repository or reconciliation of this information, making it extremely difficult to assemble a regional system map.  As regional strategic planning continues, creating and maintaining a region-wide infrastructure mapping element ought to be a priority.

The limited data layers, and dated nature of some of the available data, illustrate the challenges to understanding the current infrastructure systems.  As regional strategic planning continues, creating and maintaining a region-wide infrastructure mapping element ought to be a priority.

Knowledge of available infrastructure is critical to planning for development and preservation priorities. Incomplete information or information that is only available from individual communities is a constraint upon the regional planning process, creating a piecemeal approach, particularly with data that has such critical implications to the development process.  Water and sewer infrastructure information ought to be available much as local and regional roadway information has been documented.

## Information Technology Infrastructure

In this day and age, access to reliable information technology is tremendously important. The Massachusetts Rural Access Commission Report discussed the need to expand broadband access to rural communities and service providers as a much needed area of improvement in Massachusetts.  The communities of Barre, Brookfield, Hardwick, New Braintree, North Brookfield, Oakham, Princeton, Warren, and West Brookfield all highlighted the need for improvements to information technology.

Improved access to reliable Information Technology (IT) would promote the following:

- Improved economic development

- Increase marketing for local small businesses to use internet for planning, compliance, research, and marketing

- Reduction of vehicle miles traveled by reducing travel in typically single occupant vehicles to service providers , shopping, and even employment (work at home options increase)

- Improved quality of life

- Online education

- Employment networking

- Improved access to local, state, and federal government online services.

The Mass Broadband 123 project consists of over 1,200 miles of fiber to connect over 120 unserved and underserved communities in western and north central Massachusetts.  Mass Broadband Initiative (MBI)

works to bring fiber optic to communities up to the last mile. The "Last Mile" is a broadband network term that describes the network infrastructure closest to the end-users, the residents, businesses and community facilities.  For the Rural-11 MBI has provided fiber optic to the last mile for all but North Brookfield, Oakham, and Rutland.  The following table shows MBI's effort in the Rural -11.

| | Mass Broadband 123 Status; Coverage Level as of December 2013 | Community Anchor Institutions |
|---|---|---|
| Barre | Fiber Installed and Accepted | 3 Public Safety, and 2 Schools |
| Brookfield | Fiber Installed and Accepted | 3 Public Safety, 1 Library and 1 Schools |
| East Brookfield | Fiber Installed and Accepted | 2 Other Government Entities, 1 School, and 1 Public Safety Entity |
| Hardwick | Fiber Installed and Accepted  to Center of Town | 1 Community Support Organization, 1 Public Safety Entity, 1 Library, 1 Other Government Entity |
| New Braintree | Fiber Installed and Accepted; Network Point of Interconnection; Partial DSL Only | 2 Public Safety Entity, 1 Library, 1 Other Government Entity |
| North Brookfield | Not served by MBI | |
| Oakham | Not served by MBI | |
| Princeton | Fiber Installed and Accepted; Partial DSL Only | 1 Community Support Organization, 2 Public Safety Entity, 1 Library, 1 School, 2 Other Government Entity |
| Rutland | Not served by MBI | |
| Warren | Fiber Installed and Accepted to Center of Town | 1  Public Safety Entity, 1 Library, 1 Other Government Entity |
| West Brookfield | Fiber Installed and Accepted | 1  Public Safety Entity, 1 Library, 1 School |

**Figure 34 - MBI's Efforts in Rural-11 Region as of December 2013**
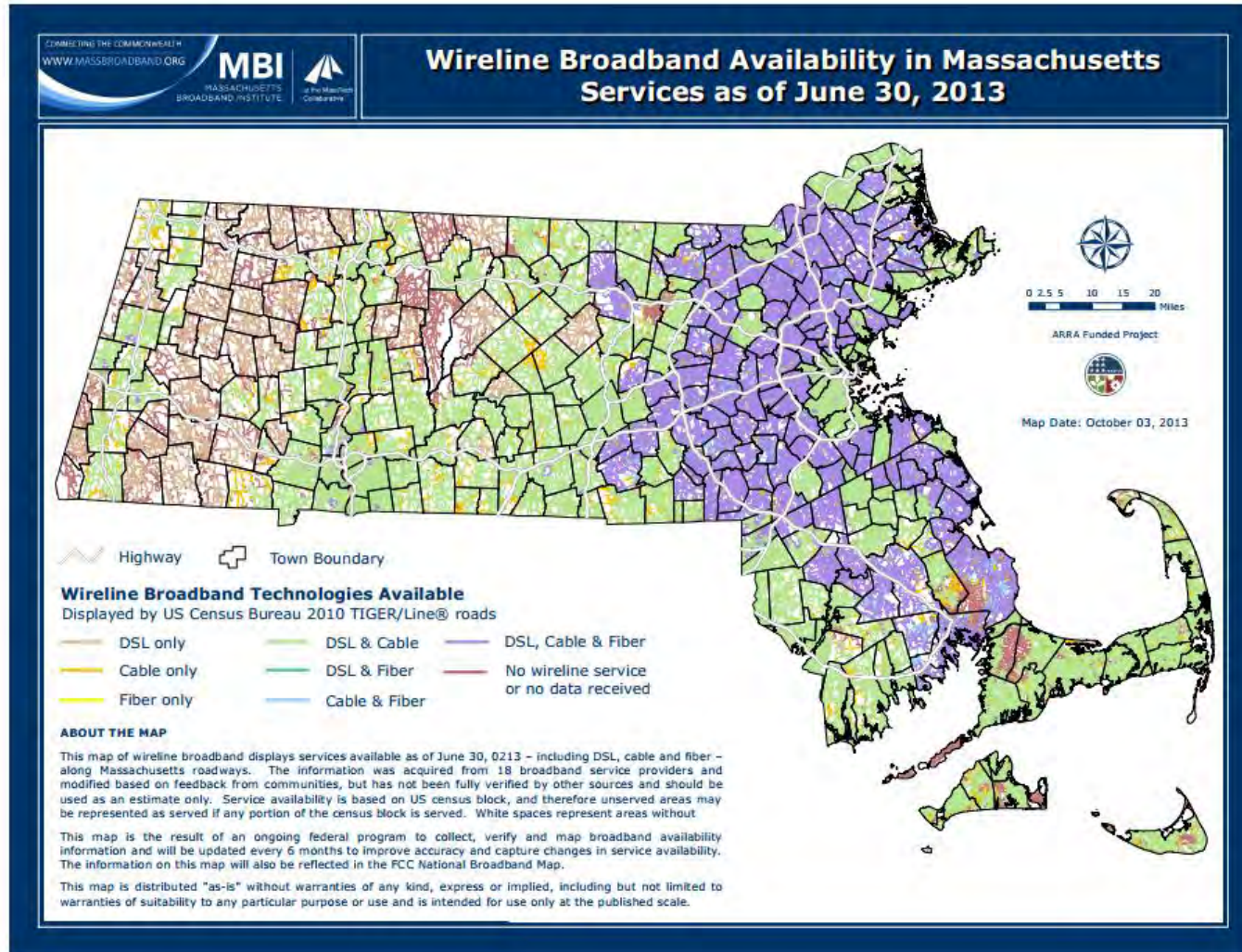
**Figure 35 - Wireline Broadband Availability**
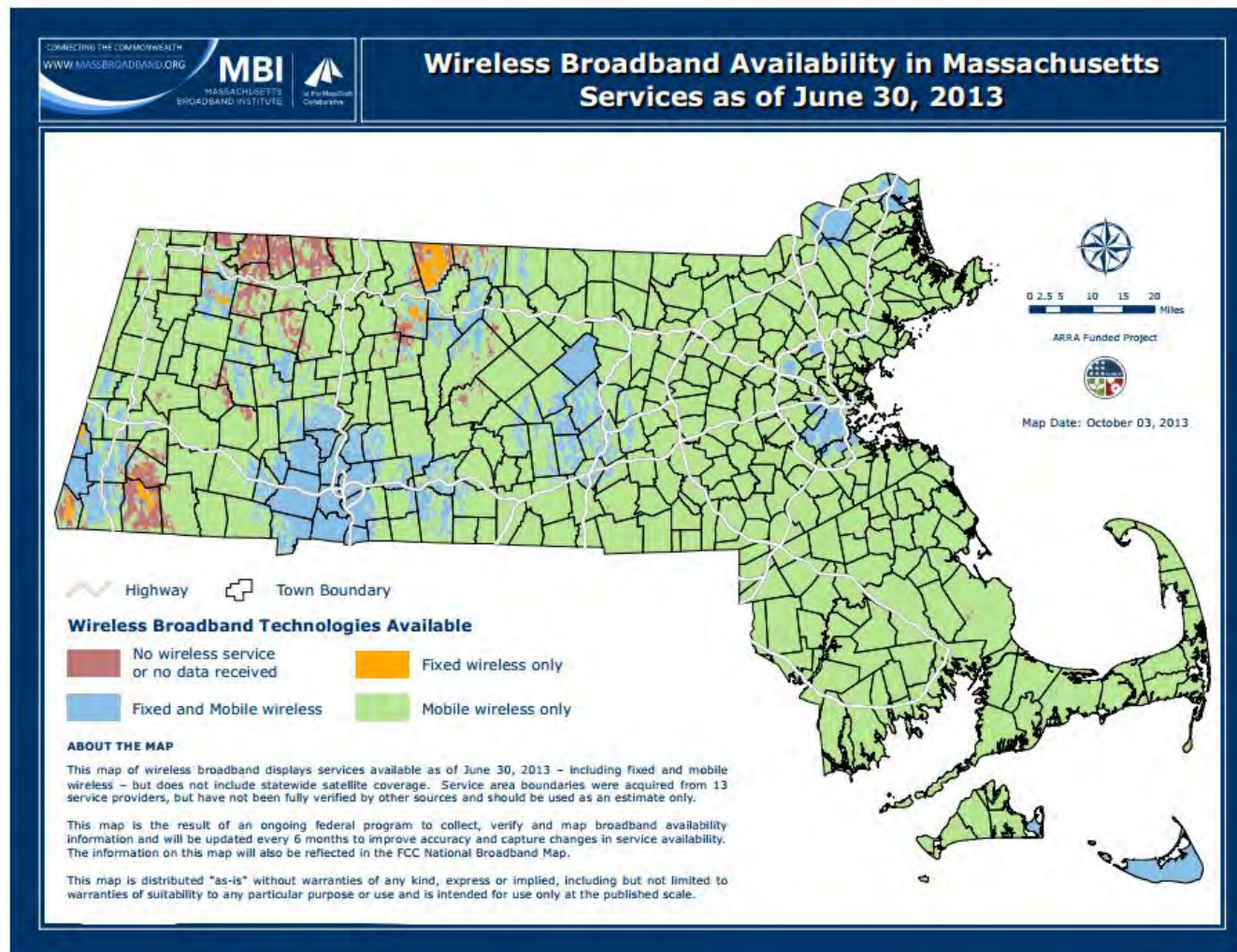
Figure 36 - Wireless Broadband Availability

Some Massachusetts municipalities are exploring making the investment to wire entire towns for improved IT access.

Even cell phone coverage was highlighted as a need by communities in the Rural-11 Region. The map below demonstrates the level of cell phone coverage in the Rural-11 Region. Large areas still have poor service and frequent dropped calls.
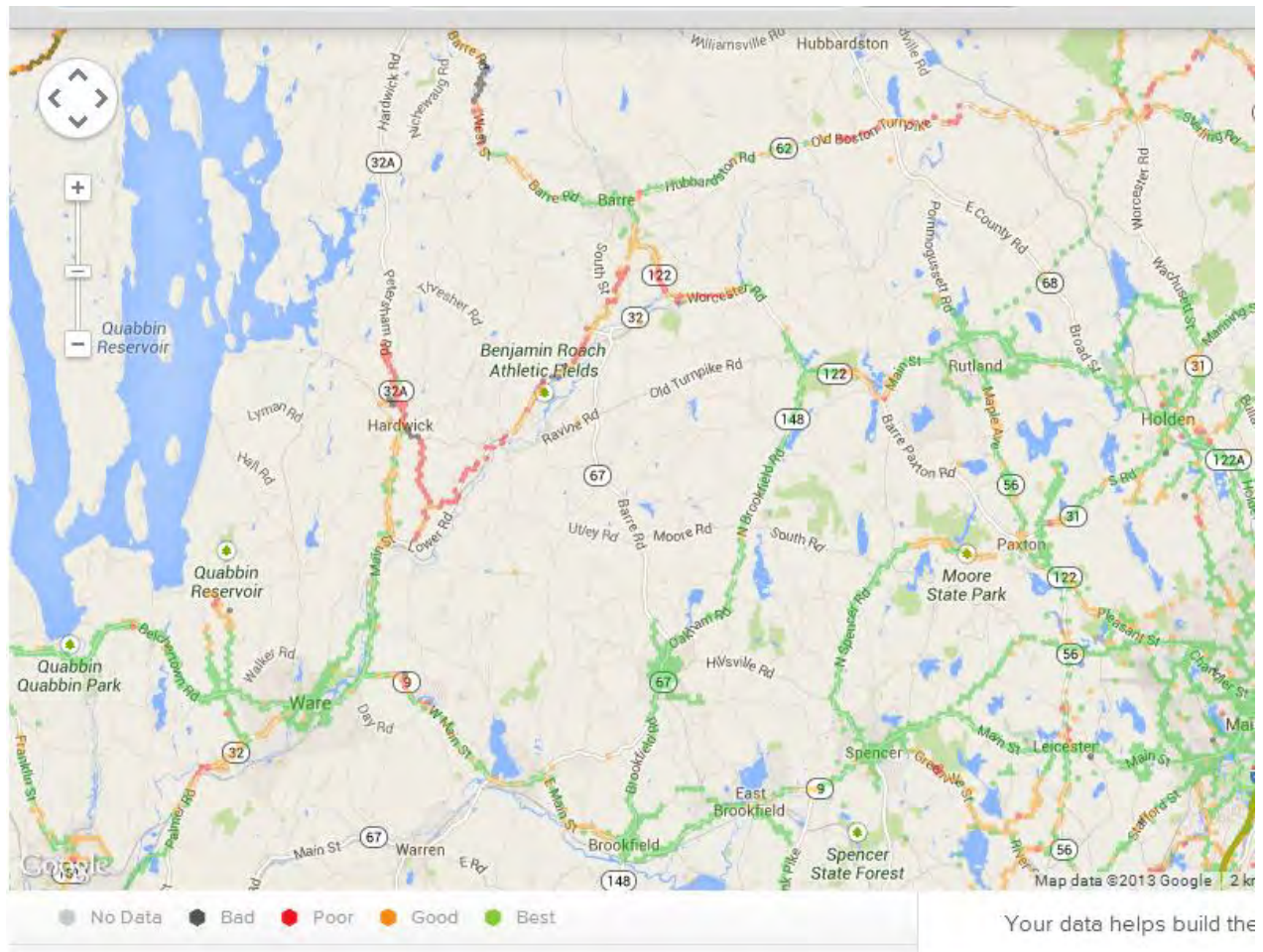


**Figure 37 - http://www.rootmetrics.com/check-coverage/ December 24, 21013, based on 349,726 samples. Call coverage**

At least seven (7) different carriers provide cell phone service in the Rural-11 Region. But the best service is limited to the southern and eastern sections of the Rural-11 Region.

## Alternative Energy Infrastructure

While, the Town of Barre is the region's only State-certified Green Community, all eleven communities have an interest in alternative energy generation.  Participants noted that because of the abundance of undeveloped land in some areas, including farms and landfills, property owners and municipalities have explored the possibility of alternative energy generation, either solar farms or wind farms. Either use would create and second land use and possible income generation. Solar is certainly a greener energy choice and an attractive source of property tax revenue for municipalities. There is no need for water, sewer or major road development. And it produces no noise, traffic, school costs, off gases or effluents. For these reasons, many towns look favorably upon these projects.  However because of the lack of access or proximity to three (3) phase[24] energy distribution those efforts have fallen flat.

The towns of Barre, Hardwick, New Braintree, Princeton, and West Brookfield indicated the need for three (3) phase power infrastructure.  Initial site considerations include size, exposure, zoning, and proximity to three (*3)-phase power*. In order to carry power to the market, a site's proximity to power is critical. Developers estimate that accessing power over one-quarter mile (1/4) from a site is not financially feasible. An ideal site is a cleared, non-shaded parcel that is zoned commercial or industrial within close proximity to three (3)-phase power. However, wooded parcels with slopes will also generate interest from developers as long as power and permitting requirements are met.

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**Strategy 4:**  Identify regionally significant or priority infrastructure investments (SIIs) intended to support and advance regional priority sites (PDAs and PPAs).

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*24 Three-phase electric power is a common method of alternating-current electric power generation, transmission, and distribution.[1] It is a type of polyphase system and is the most common method used by electrical grids worldwide to transfer power.*

## 12. Working Landscapes

### Goals and Impact on the Economy



The purpose of the working landscapes inventory was to identify all of the agricultural-related operations in the Rural-11 Region.  For the purposes of this analysis, working landscapes were defined as entities that have a farming or agricultural-related purpose such as  farms agricultural-based businesses, and parcels of land that took advantage of tax reducing and land conserving programs. working landscapes were, therefore, inclusive of:

- Farms

- Chapter 61/61A[25] lands

- Agricultural Preservation Restriction (APR) lands

- Conservation Restriction (CR) lands that had an agricultural focus, and

- other agricultural based businesses that reasonably supported the local or regional agricultural economy.

The importance of specifically including and focusing on working landscapes in this project stems from the USDA 2007 Census of Agriculture Data noting that Worcester County ranks fourth among all counties in the US for the value of direct sales of agricultural products to consumers, at nearly $5 million, or 25% of the state's total.  It is also based on the noting that agriculture was clearly an important economic sector and identity of the region based on field visits and observation and public feedback.

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[25] *Chapter 61/61A is a voluntary program used by landowners in MA to receive reduced property taxes in exchange for the protection of their land from commercial or residential development, and for the continued management and production of their forested (61) or agricultural/horticultural (61A) land. Property taxes on these lands are reduced from their highest and best use value, also known as their development value, to their timber or agricultural land value.*

While the Central Massachusetts Workforce Investment Board reports (Figure 6) that agricultural employment in the Rural 11 area is less than 5%, enough evidence was uncovered to suggest that this likely understates the significant share of the agricultural economy. Many of the project participants and contributors were in fact farmers or wood lot owners. Several working residents of the Rural-11 Region described their participation in the farm economy as a second occupation (possibly not accounted for in the Workforce Investment Board reports) in combination with primary jobs outside of the farm or woodlot. Utilizing their land as working landscapes allowed them to engage in entrepreneurship and create supplemental income for themselves and their families. This income often went unreported, since some farming in the Rural-11 Region was secondary to a primary or principal occupation. Some farmers were even able to establish strong businesses for themselves by creating value added products. Aside from helping to support entrepreneurship, working landscapes contribute to the local and regional economy by providing the food we eat, the raw materials that local manufacturers use, and by offering tourism in the form of events, activities, and historic and cultural resources. working landscapes, which specialize in foods, fibers, herbs, timber, or animal services like pet boarding, breeding, and horse riding, fill niche markets that help support families and create rich, healthy communities at the local, regional, and state-wide level.

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**Strategy 5:** Due to a predominantly agricultural and agriculture-related economy and character, this report developed a special focus on these sites which were termed "working landscapes" and informed many of the PDA and PPA selections. Next steps should include a continued emphasis on these areas.

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## Methods/Process

Our investigation into working landscapes began in the same way we investigated the PPAs, PDAs and PIIs of the region: reviewing each town's existing planning documents. These documents included: Open Space & Recreation Plans, Heritage Landscape Inventories, Master Plans, and Reconnaissance Plans.

| | Master Plan | Open Space & Recreation Plan | Reconnaissance Plan | Heritage Landscape Inventory |
|---|---|---|---|---|
| Barre | ✓ | ✓ | ✓ | ✓ |
| Brookfield | ✓ | ✓ | ✓ | ✓ |
| East Brookfield | ✓ | | ✓ | ✓ |
| Hardwick | | ✓ | ✓ | ✓ |
| New Braintree | | | | |
| North Brookfield | ✓ | ✓ | ✓ | ✓ |
| Oakham | | ✓ | | |
| Princeton | ✓ | ✓ | | ✓ |
| Rutland | ✓ | ✓ | | ✓ |
| Warren | ✓ | ✓ | ✓ | ✓ |
| West Brookfield | | ✓ | ✓ | |

**Figure 38 - Planning Documents for Rural -11 contributing to identification of working landscapes**

Each town's existing planning documents contained a wealth of knowledge about the presence and importance of working landscapes, as well as information about each community's values, the most common being the preservation of a New England, rural, small-town character. This information provided a baseline for discussions at meetings, allowing participants to cross reference how accurate the information was, and helping to create a comprehensive list of working landscapes in the region.

Another way we investigated the working landscapes of the region was by obtaining business certificates from Town Clerk's offices and land parcel data from Town's Assessor's offices. Business certificates proved that certain agricultural businesses existed, and they also provided specifications like ownership, size, and location. Assessor's data about APR, CR, and Ch.61/61A lands also helped contribute to our lists. A problem we found with including these programs in our working landscapes Inventory, however, was that landowners move their lands into or out of these tax programs periodically, rendering our lists less than fully current.   Often there is a delay from the time a parcel is entered into the Chapter land program and the time it is recorded.

The next step in our investigation of working landscapes was to research information on the internet. The resources we found most helpful included: the Massachusetts Department of Agricultural Resources (MDAR) website[26]; www.farmfresh.org; the "Mass Grown" interactive webpage[27]; a list of corporations

compiled by the MA Secretary of the Commonwealth[28]; and a recently added farmer's market GIS layer on www.MassGIS.gov. Other on-line investigation efforts included identifying farms through aerial photos on Google Maps, and running basic searches for agricultural businesses in each Town.

The last step in our preliminary search for working landscapes came from agri-tourism maps. Rutland and Brookfield were the only towns with an individual agri-tourism map, however, MDAR, in conjunction with the USDA's Rural Development State Office, developed a large agri-tourism map as well. These maps were especially helpful in creating our working landscapes lists because they contained accurate and up-to-date information.

After all of these resources were investigated, we had a relatively long list of each Town's working landscapes with which to bring to town meetings. These town meetings were an "interview" type process where participants had the chance to provide feedback. Representatives included residents, town officials, board of selectmen, planning board, and agricultural commission members, farm bureaus, agency representatives from MDAR and Department of Conservation and Recreation (DCR), and non-profits such as East Quabbin Land Trust and Mass Audubon. The feedback we received served to correct our predetermined lists so that our lists only contained what actually existed and what was significant to the local, regional, and state-wide economy. Participants were also helpful in pointing out working landscapes that had not been discovered yet. As we continually searched for working landscapes and refined our lists by receiving feedback at town and public meetings, our working landscapes Inventory became increasingly comprehensive and up-to-date. Some key information derived from our inventory includes:

- The total number of working landscapes we identified in the Rural-11 was 1,709

- They cover an area of 49,860.95 acres.

- 23,901 of these acres are attributed to the Ch.61/61A program

- 7,610 acres are attributed to the APR program.

- The largest farm in the working landscapes category was Elm Hill Farm in North Brookfield, listed as an APR with 558.10 acres.

- The average size of farms in the Rural-11 Region came out to be 29.18 acres.

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28 https://www.sec.state.ma.us/cor/corpweb/corcor.htm

- Land from 436 of the working landscapes overlapped with newly identified PPA and PDA lands.

## Themes

The end result of the working landscapes Inventory was the acknowledgement of the recurring themes. These themes arose out of the conversations we had at our local and regional meetings, where participants expressed concerns about the health and longevity of the region's agricultural economy. These themes are broad and can be thought of as goals, clarifying a direction for actions or investment. The themes identified were:

- Marketing was a prevalent theme. The need for new agri-tourism maps along farm corridors improving the customer's navigation of working landscape destinations;

- New zoning by-laws to protect farms and the farmers;

- Increased regional collaboration on-line and off;

- Regulatory reform could allow farmers to earn income in more diverse ways and with less needless barriers and hurdles;

- Increased cooperative  distribution and marketing efforts for farmers, but not necessarily done by farmers;

- Economic development such as increased manufacturing plants, kilns, factories, as well as other small business developments would create end users and markets that demand the region's agricultural products.

- Improved infrastructure, including water quality, electricity capacity, reinforced bridges, and repaved roads;

- Wider information technology coverage through cell phone towers and broad-band internet;
- A survey to determine the remaining unknown needs of farmers and their supporting businesses;

- Agricultural education to train future generations of farmers; and

- Increased incentives for farm preservation or "farm tenure."

From these themes we determined specific actions including:

1. <u>Improve infrastructure.</u> One action had to do with the theme of improving infrastructure, which would require increasing electricity capacity and addressing existing farm-land regulations. Participants in our project explained that they would like farmers to be able to use their unproductive farm and pasture land for renewable energy. Wind mills or solar panels would help farmers generate supplemental income; however this would require the installation of three (3)-phase power as well as the reshaping of by-laws to allow farmers to do so.  Farm parcels with Agricultural Preservation Restrictions (APR) are limited in their utility for alternative power generation.

2. <u>Understand farmer needs and challenges.</u> A second action we determined came from the farmer's needs angle, which was to partner with UMass Amherst and conduct an in-depth farmer's needs survey.  A partnership with UMass Amherst would also help support students in their need for work experience as well provide us with information about the following: farmer's needs; how farmers feel in regards to incentives to ensure the preservation of their land; and it could let us know about how farmers feel about teaching in agricultural programs. Partnering with nearby universities could also help with the marketing efforts theme. Students in nearby marketing classes could use this next step as a cap-stone project or internship, helping farmers to market their goods, services, and the farm region in general.

3. <u>Facilitate local agricultural education.</u> A third action comes from the agricultural education theme, and would investigate what it would take to have farmers teach in these programs. The consensus at our meetings was that farmers themselves are the most knowledgeable persons in their field; asking them to teach would produce the next most capable generation of farmers. This initiative would also help fulfill the theme of creating supplemental income for farmers. Farmers could certainly be called on to provide useful and exciting information on agricultural topics, such as biology, business, land management at a variety of levels including elementary, middle and senior high school.

4. <u>Development of middle user and end user markets.</u> A fourth action we identified was the development of a new type of wood kiln. This idea received a lot of support since there are very few wood kilns in New England, and developing the latest type of wood kiln would provide the region with a competitive advantage.

5. <u>Prioritization of the inventory of working landscapes.</u> A fifth action might be to identify Regionally Significant working landscapes. This process would start by identifying a clear definition of what it means to be "regionally significant working landscape." Attributes that

define this term might consider a farm's: size; amount of income generated; ability to support other related businesses; ability to contribute to tourism or recreation; history; ability to conserve or protect natural resources; number of employees; and/or the amount of community support it has. This format for identifying Regionally Significant working landscapes was contributed by Catherine DeRonde, an Agricultural Economist from MDAR, and provides a clear starting point for another in-depth investigation into the potential of the agricultural economy in the Rural-11 Region.

## Conclusions

The conclusions from the working landscapes Inventory can be summarized by looking at the regions strengths, weaknesses, opportunities, and threats (SWOT). The Rural-11 Region's **strengths** lie in its resources. It has almost 50,000 acres of agricultural land, much of which is identified as prime farm land. Its ability to produce a substantial amount of food, and its ability to sell this food directly to consumers, ensures its presence as an active sector of the economy.   A strength of the Rural-11 Region is in the amount of involvement by the community. The meetings were well attended by concerned residents, farmers, town officials, state representatives, and others who all had a genuine desire to see the agricultural economy of the region prosper. Having such support will enhance the investments and efforts of this economic development strategy, and make good use of tax dollars.

This region's **weakness** is in its need for improved infrastructure, from roads and bridges to broad-band internet, cell phone coverage, and three (3)-phase power. Addressing these challenges will provide many future opportunities. These improvements have the potential for ensuring the presence and productivity of the agricultural economy long into the future.

An **opportunity** for this region is the development of agri-tourism. More and more, the source of food and the systems of its distribution are being taught to children, teenagers, and young adults. Coordinating the farming resources of the Rural-11 Region and making it easier for schools and tourists to visit will surely strengthen the stability of the agricultural economy.

This region's **threats** include the fact that the average age of Massachusetts farmers is 61, telling us that farms might be closing soon.  These same aging farmers are knowledgeable and potentially willing to educate the next generation of farmers in return for income. Another threat in the Rural-11 Region lies increasing development pressure that entice farmers to sell off their land to generate f retirement income. This threat affects the existence of farms in the Rural-11 Region indefinitely, and needs to be addressed with proper incentives for farmers to do otherwise.  A clear threat to the Rural-11 Region would have to be in the state and federal regulations on farmers' capabilities to create income, as well

as the rules guiding the tax reducing and land conserving programs such as Ch.61/61A and APR/CR lands. Community organizing, as well as by-law reform, would help farmers create the income they need to continue their careers.

The importance of making food and farming services available to local, regional, and state-wide communities cannot be emphasized enough. The suggestions for improvement identified through this economic development strategy are clear and will be a direct contribution to its ability to sustain itself in the long-term. What is required now is the appropriate action of the State, as well as each community involved, to implement the investments identified and coordinate the stakeholders to enhance this region's working landscapes and food systems.

## 13. Summary and Conclusion

*The Process*

The Rural-11 Prioritization Project is a regional-level planning process that utilized community-based priorities and strategies to identify sites in the study area that are Priority Development Areas (PDAs), Priority Preservation Areas (PPAs), and Priority Infrastructure Investment (PIIs) projects.  In addition, this project also gave special consideration to rural working landscapes which resulted in an inventory of working landscapes in the 11 town region.  This report is the outcome of the planning process and the identification of sites.  Importantly, the report also includes specific goals, strategies, and actions in which to pursue the timely and well considered development or preservation of these sites and other elements of community development and preservation.

The Rural-11 Prioritization Project engaged multiple levels of government, residents and the private sector in setting priorities for the future of the region; specifically, for identifying future development and preservation areas, and investments of limited public resources. Local perspectives were the first step in this regional planning process that looked beyond municipal boundaries and focused on the larger region and common goals. The result is a set of priorities that hold the potential for providing a greater return on future public investments, reducing the need to build on undeveloped land, and protecting natural resources on which residents, businesses, and wildlife depend.

The most significant intended outcome in this effort was that priorities for development and for preservation directly reflect local perspectives. This local perspective, although it has been part of the regional dialogue for some time, had not yet been articulated and shared with regional or state agencies with the ability to direct resources to address the identified needs. This project was a concerted effort to clearly advance local goals for development and preservation.

As stated earlier in this report, one of the outcomes of this project was the desire for a shared regional vision and shared goals within the Rural-11 Region.  The foundation has begun – by building upon the priorities identified by the study which came from the grassroots level, having been institutionalized in municipal master plans, Open Space and Recreation Plans, zoning bylaws, and other local plans and policies.  In this way, these identified priorities reflect long-term regional efforts undertaken by a wide variety of groups and organizations in nearly every arena from natural resource preservation and historic preservation to transportation and infrastructure planning and economic development and everything in between.

*A Regional Perspective*

Commonly held knowledge is a powerful community organizing tool. As was evident in previous prioritization planning efforts in the Central Massachusetts region, residents and other stakeholders participating in the Rural-11 process exhibited significant interest in the priorities of neighboring communities. This resulted in an effective and collaborative regional process with significant sharing of information and ideas. There is much evidence that this stream of open sharing of information between and among neighboring communities will continue. Indeed, it must if regional prosperity is to continue in the Rural-11 Region. Already under way are several regional or multi-municipal initiatives such as sharing of Department of Public Works resources, a marketing campaign for the Lost Villages Scenic Byway, cooperative purchasing and others. There are tangible benefits of thinking regionally:

- First, there is cost-effectiveness in regional delivery of public services

- Next, there is predictability in a shared regional vision for growth and development, and

- Finally, there is the preservation of unique landscapes that link to assets of centuries past and to natural resources.

But it must be remembered that it is frequently a challenge for the stewards of a village or town to envision themselves and their immediate responsibilities within a larger regional perspective. A perspective that is complex in logistics, diverse in thought, and asks for close and trusting cooperation or sharing of scarce resources with organizational entities over which they have no control.

The Rural-11 Prioritization Project positions all of the key public sector participants in a constellation they created themselves for the express purpose of allocating scarce public sector resources in the most cost effective manner. Even more so, given the participation of the private and non-profit sectors in this project, from the breakout table discussions in June to the panel discussion at the September regional meeting, tells us that many of the pieces are in place. Everyone is aware of what the priorities are locally and regionally. Even more so, these various groups of people will now think about what it means to be part of this region, what they have in common, and what sorts of goals can they all rally around to move the collective forward. Individual communities may respond to a shared goal differently, as a reflection of unique characteristics, but the goal moves toward success for the region.

As has been stated before during this process, communities benefit from the region's success. But the region can't succeed without the communities. Regional planning works with a fundamental understanding that, in order to meaningfully address local concerns, we must understand and act on them in a regional context.

*Role of the State*

Supporting priorities that promise the best return on investment will require that the State thoughtfully align its investments. The State has indicated that it will do so, and a record of this can be found in the public investments being used to support the previous prioritization projects. By supporting identified priorities through state programs, such as the MassWorks Infrastructure Program, District Local Technical Assistance (DLTA), the Community Innovation Challenge grant, and other technical assistance, the State is demonstrating its commitment to a regional planning process rooted at the local level.

Given its larger perspective, both geographically and programmatically, the State should look for opportunities to bundle similar investments that may apply in a variety of priority locations. Large investment projects may be readily apparent; however, multiple locations may share a particular investment need, such as the need for certain roadway signalization improvements, regional approaches to alternative energy development, mill redevelopment, replacement of sewer pipes or other similar projects. Rather than pursuing these investments individually, there may be economies of scale and other more efficient practices that could consolidate intended outcomes into one request that offers a greater return on investment – a regional approach. CMRPC is a willing partner in applying this perspective and finding these opportunities.

In a similar manner, the State should look to regional frameworks that advance multi-municipal cooperation and collective projects that support identified regionally-significant and state-wide priorities, such as has been emphasized in the MassWorks Program and other state regional services and funding initiatives. For example, as this type of planning and investment priority setting continues, there will likely be the need and the opportunity to demonstrate how investment in one municipality brings benefit to a broader group of municipalities and the systems on which they rely, ranging from transportation to water quality. This is not always straightforward; however, by strengthening incentives that foster inter-municipal collaborations and sharing costs and benefits from major developments across municipalities, State, regional, and local priorities will move together toward a common regional goal.  For example, prospects might be found in seeking opportunities to share energy managers among municipalities or information technology and marketing resources among a cluster of symbiotic agricultural businesses.

CMRPC will also continue to promote the principles and assist in advancing the priority areas toward each town's goals.  CMRPC can provide local technical assistance to augment local planning capacity and move development and preservation initiatives closer to implementation through broad regional programs and initiatives. This assistance involves helping cities and towns advance zoning changes that set the foundation or complement future investments, assisting with economic development activities

that streamline permitting while creating more opportunities for residents and businesses throughout the region, and . Local knowledge is critical to successful collaborations, and guidance from municipal staff and local officials informed by community feedback is essential.

*Challenges Faced*

Several key challenges face this subregion in particular that have been illuminated over the course of this project.  These challenges include the housing gap, the health and viability of rural working landscapes including agriculture, and the issue of infrastructure including wastewater solutions to support desired development goals.

As highlighted in this report, housing production in this subregion is not projected to keep track with the anticipated housing demand. This is a significant problem because a gap in housing supply will facilitate much inflated  sales prices and market rents. Further, the lack of affoirtdabvle housing could have significant consequences for the potential for economic development in the region preventing a viable workforce from being available to area employers. The State and CMRPC will need to continue to play a role in assisting and providing education, incentives, and tools for municipalities, particularly those with limited or no development staff or resources, to develop housing production plans and capitalize on opportunities to add housing to areas in town centers and other appropriate areas. This assistance should also include encouraging the integration of a variety of housing types into residential developments. As shown in the Community Context section, the region is experiencing demographic and economic changes. The housing market stands to benefit if it adapts to reflect the needs and shifting preferences of current and future residents.

Infrastructure investments should be made strategically and should be conditioned on local regulatory decisions that support identified priorities. For example, roadway improvements can support planned growth but can also encourage new developments that seek the advantage of that additional roadway capacity. As the plan is implemented, attention should be paid to how developments are moving forward and the mixture of land uses being planned so that public investments are not quickly eroded by development.

Finally, a working landscapes inventory was assembled to identify all of the agricultural-related operations in the Rural-11 Region which were inclusive of: farms, Chapter 61/61A  lands, Agricultural Preservation Restriction (APR) lands, Conservation Restriction (CR) lands that had an agricultural focus, and, other agricultural based businesses that reasonably supported the local or regional agricultural economy.  The importance of specifically including and focusing on working landscapes in this project stems from Worcester County 's ranks among all counties in the US for the value of direct sales of

agricultural products to consumers and the fact that agriculture was clearly an important economic sector in the region.

## Project Outcomes

To summarize, the project resulted in the identification of 29 Priority Development Areas, 82 Priority Preservation Areas, two combined PDA/PPA sites, and a number of Priority Infrastructure Investment sites intended to facilitate or enhance development opportunities.

Priority Development Areas (PDAs) are areas within a town that have been identified as capable of supporting additional development or as candidates for redevelopment. These are areas on which a town is focusing its energy to promote thoughtful economic development that is closely tied to the community's goals.  A total of 66 PDAs, covering over 6,800 acres, were identified by towns in the first stage of the process.  Additionally, four sites were combined PDA/PPAs.  The first or local stage of the process was followed by a regional prioritization which reduced the list to 29 PDAs encompassing 3,904 acres.  Selected sites avered 135 acres in size with a high of 1,195 acres and a low of 0.34 acres.  The regionally significant development areas were estimated to result in 25,400 additional jobs for the region and 400 additional housing units.

Priority Preservation Areas (PPAs) are areas within a town that deserve special protection due to the presence of significant environmental factors and natural features, such as endangered species habitats or areas critical to drinking water supply, scenic vistas, areas important to a cultural landscape, or areas of historical significance. A total of 92 local PPAs were identified by towns with an area of nearly 24,000 acres. PPAs ranged in size from over 1,000 acres to less than 20 acres with an average size of 230 acres. The regional prioritization stage reduced this to 82 sites.

Significant or Priority Infrastructure Investments (PIIs) are critical in supporting increased development of identified PDAs while respecting the need to protect PPAs.  These investments include transportation infrastructure, water supply, wastewater facilities, stormwater infrastructure, information technology infrastructure, and alternative energy infrastructure.

Finally, the Rural-11 project was unique in that it specifically focused on rural working landscapes due to the agricultural character of the study area.  Working landscapes (WLs) are those operations that are typically described as farms, woodlots or affiliated businesses.  A comprehensive list of working landscapes was assembled that included 1,709 sites encompassing 49,861 acres.  The largest site was Elm Hill Farm in North Brookfield at 558 acres while the average size of a working landscape in the study areas was 29.18 acres.  Some working landscapes were included in the inventory of regional PPAs.

However, simply identifying PDAs, PPAs, and PIIs is not enough to facilitate a proactive and directed planning process for development and preservation of priority sites in the study area. What is needed are specific strategies and actions needed to direct implementation of the program.

## Specific Next Steps

Many specific strategies were identified in the preceding sections of this report with regard to the local and regional priority development and preservation areas, significant infrastructure investments, and working landscapes. These strategies and the priority areas themselves are the focus and outcome of this process but specific steps need to be taken to ensure that these sites and strategies are implemented in a coordinated and timely way.

As with the other prioritization projects, this information will be forwarded to Executive Office of Energy and Environmental Affairs (EOEEA), the Executive Office of Housing and Economic Development (EOHED), Department of Transportation (MassDOT), and the Department of Agricultural Resources (MDAR). EOEEA and EOHED will review and perform further analysis of the Rural-11 Region Priorities in a manner similar to the review and analysis of the other regional priority plans. These agencies will determine which of the Rural-11 Regional Priorities align most closely with the development and preservation priorities of the state as a whole,. In early 2014, the stakeholders of the Rural-11 Project will be asked to further contribute in the process by adding their perspective and comment on the State analysis. The state's priorities will then be refined to reflect regional input. These State priorities will then be given preference as R-11 communities seek to obtain State funding for priority projects.

Regionally, the identified priorities are expected to become the focus of CMRPC planning resources such as District Local Technical Assistance (DLTA), local planning assistance, and other resources as they become available. These prioritization projects will form the foundation for future regional transportation, housing, open space and recreation, land use, and economic development planning. For example, to align with the State-wide housing initiatives, CMRPC will target technical assistance, information, and resources to communities who make strides to plan for increased housing opportunities appropriate for their communities. Similarly much ground work has been set to collaborate with other state agencies such as:

- Department of Energy Resources to explore three (3) phase power expansion

- Department of Environmental Protection and Department of Conservation and Recreation to protect our water supplies

- Massachusetts Office of Business Development to expand businesses to underdeveloped mills

- MassBroadband Institute and the communications industry to enhance our information technology infrastructure

- Central Massachusetts Metropolitan Planning Organization and the Worcester Regional Transit Authority to prioritize roadway improvements and possible expansion of public transit services.

Many projects were identified with regard to Working landscapes. In the short term, CMPRC will work with the region's agricultural related non-profits, tourism boards, chambers of commerce, and state and federal agencies to develop targeted agricultural programs and efforts such as agri-tourism marketing strategies, developing and implementing a farm survey to further understand the individual farm needs and challenges, working with state policy makers and legislators to explore actions to stabilize family farms, reviewing regulations and restrictions, encouraging broader agricultural educational opportunities and programs such as apprenticeships, and expand municipal abilities to refine and update zoning bylaws that advance the development or preservation of the priorities identified. Regional prioritization plans consist of local and regional priorities and ultimately receive further refinement by the state as noted above. However, a commonality is that each of these plans were developed with critical local input and direction. This ensured that these plans possess the needed local support along with the regional cohesiveness and the state-level commitment to funding.

## Strategies and Actions

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### Key Immediate Actions for Implementation

8. **Establish PDA Implementation Committee** (Action 2.2 - When: March 2014 and Ongoing); Who: CMRPC and PDA Committee)

9. **Actively use prioritization lists** and plans to evaluate and plan for future investment in the community (Action 1.1 - When: January 2014 and Ongoing); Who: CMRPC and PDA Committee)

10. **Filter Priority Development Areas** (Action 2.1 – When: January to March 2014; Who: State, CMRPC, Local PDA Subcommittee)

11. **Use PDAs, PPAs, and PIIs as focus of programmatic efforts** (Action 2.3 - When: Ongoing); Who: CMRPC, Physical Development Committee, and PDA Committee)

12. **Identify and seek implementation of best practices and programs for protection and support of agricultural landscapes and the rural agricultural economy** (Action 5.6 - When: January 2014 and Ongoing); Who: CMRPC and PDA Committee)

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13. **Initiate Subregional Agricultural Committee** (Action 5.8 - When: January 2014 and Ongoing); Who: CMRPC)

14. **Partner with other RPAs regarding the Agricultural Economy** (Action 5.11 - When: Spring 2014 and Ongoing); Who: CMRPC)

An implementable plan must have specific strategies and actions along with clear implementation criteria. Specific next step actions for the Rural – 11 plan are as follows:

**Strategy 1:** A general strategy is to focus development efforts in a few key locations in the communities to offset the existing dispersed patterns of development as per the principles established to guide the planning process.

Actions/Next Steps:

1.1 Use prioritization lists and plans to evaluate and plan for future investment in the community.

1.2 Factor PII list into local infrastructure planning such as a capital improvements plans.

**Strategy 2:** Select regionally significant priority areas (PDAs and PPAs) from the local priorities based on the principles described herein.

Actions/Next Steps:

2.1 Priority Development Areas Filtered: The State EOHED and EEA, assisted by CMRPC, shall take one final opportunity to refine the list of PDAs, PPA, and PIIs so that remaining sites can be given priority to receive state funds. Specific actions include:

   a. Work with State to further narrow PDAs
   b. Final list of PDAs and PPAs should form the foundation of future development efforts
   c. Initiate development of a comprehensive regional plan

2.2 Consider Implementation Committee for PDA Projects and a Comprehensive Regional Plan: A committee to implement the strategies and actions contained in this plan is particularly important for the Rural – 11 due to its cohesiveness and focus on agriculture and working landscapes. Specific actions include:

    a.    Continue to form partnerships and use outreach to identify and secure stakeholders

    b.    Identify current and potential future CMRPC programs and applicable funding sources that specifically offer opportunity to advance R-11 goals, strategies, policies, and actions.

2.3    <u>Consider PDAs and PIIs as focus of programmatic efforts</u>:  Consider identified PDAs and PIIs as focus of programmatic efforts including EDA, DLTA, LPA, MassWorks, etc.

    a.    Include PDA, PII, and PPA reference to DLTA application criteria and MassWorks applications.

    b.    Assess and rank regionalization opportunities related to R11 policies and actions

**Strategy 3:**  Develop plans, policies, and programs to ensure that sufficient housing of all types and prices are available to current and future residents of the region (otherwise referred to as a life cycle inventory or supply). This is a critical component of supporting and enhancing economic development opportunities such as the development of PDAs.

Actions/Next Steps:

3.1  <u>Identify specific PDAs for housing development and rehabilitation.</u>

3.2  <u>Identify affordable housing opportunities</u> specific to R-11 communities, including:

    a.    Identify town and village centers where small apartment buildings and units about commercial storefronts would be appropriate.  Identify barriers to facilitating these types of projects such as regulatory and infrastructure.

    b.    Identify a range of other affordable housing options for R-11 towns and specifically note which option(s) is most appropriate for each community.  Identify the barriers and opportunities for development of such units by town.

3.3  <u>Focus on the provision of residential land uses in village and town centers</u>, where there is the potential to accommodate a greater number of units and housing types.

3.4  <u>Diversify housing opportunities</u> to create more residential options, reduce development pressure on Priority Protection Areas, and facilitate land conservation.

3.5  <u>Focus housing in development areas with established access to corridors, in areas with transit access (East Brookfield or Brookfield) and/or in areas with the potential to support transit service (Warren).</u>

**Strategy 4:** Identify regionally significant or priority infrastructure investments (SIIs) intended to support and advance regional priority sites (PDAs and PPAs).

Actions/Next Steps:

4.1 In partnership with EOHED, identify infrastructure projects that provide the most value and interconnectivity to identified PDAs.

4.2 Consider infrastructure and other investments that can provide lasting value, developing community resilience, and a serving as a foundation for future efforts at economic and community development. These could include:

   a. Energy systems including renewable and local generation and distribution
   b. Local food systems including support and enhancement of local agricultural economy
   c. Local economy including incubating or attracting new businesses and supporting the health of existing local business.

**Strategy 5:** Due to a predominantly agricultural and agriculture-related economy and character, this report developed a special focus on these sites which were termed "working landscapes" and informed many of the PDA and PPA selections. Next steps should include a continued emphasis on these areas.

Actions/Next Steps:

5.1 Improve infrastructure in support of working landscapes

5.2 Better understand farmer needs and challenges. Conduct a farmer survey to obtain the information and follow up with a more detailed inquiry such as a focus group.

5.3 Partner with educational institutions and work to facilitate local agricultural education including the potential to develop one or more agricultural schools in the region.

5.4 Facilitate the development of middle user and end user markets.

5.5 Develop prioritization of the inventory of working landscapes.

5.6 Identify and seek to implement programs and policies that support agricultural tourism (agri-tourism) opportunities where appropriate, to enhance economic opportunities for

farms and other agricultural-related operations and sectors.

5.7 Research and seek to implement <u>best practices and programs</u> in our regions and RPAs related to the protection of agricultural landscapes, supporting the agricultural sector of the economy, and providing greater integration of agriculture and related sectors.

5.8 Develop regional and subregional <u>agricultural action plan</u> to establish more detailed goals, objectives, policies, and actions related to agriculture.

5.9 Initiate <u>work group or committee</u> to further policies and actions

5.10 Seek programs and <u>funding sources</u> specifically tailored to identified actions in this and the agricultural action plan.

5.11 <u>Partner with other RPAs and other organizations</u> to ensure efficient and innovative programs and initiatives

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| Strategy 1: A general strategy is to focus development efforts in a few key locations in the communities to offset the existing dispersed patterns of development as per the principles established to guide the planning process. | | | |
|---|---|---|---|
| **Actions/Next Steps** | **Priority (1,2,3)** | **Start/End** | **Participants** |
| 1.1 Use prioritization lists and plans to evaluate and plan for future investment in the community. | **1** | January 2014 and Ongoing | PDA Committee, CMRPC |
| 1.2 Factor PII list into local infrastructure planning such as a capital improvements plans. | **3** | 2016 | PDA Committee, CMRPC |
| **Strategy 2:** Select regionally significant priority areas (PDAs and PPAs) from the local priorities based on the principles described herein. | | | |
| **Actions/Next Steps** | **Priority (1,2,3)** | **Start/End** | **Participants** |
| 2.1 Priority Development Areas Filtered: The State EOHED and EEA, assisted by CMRPC, shall take one final opportunity to refine the list of PDAs, PPA, and PIIs so that remaining sites can be given priority to receive state funds. Specific actions include:<br><br>  d.  Work with State to further narrow PDAs<br>  e.  Final list of PDAs and PPAs should form the foundation of future development efforts<br>  f.  Initiate development of a comprehensive regional plan | **1** | January 2014 to March 2014<br><br>Plan foundation work to begin March 2014 and be Ongoing | State EOHED, EEA, CMRPC, Local PDA Subcommittee |
| 2.2 Consider Implementation Committee for PDA Projects and a Comprehensive Regional Plan: A committee to implement the strategies and actions contained in this plan is particularly important for the Rural – 11 due to its | **1** | March 2014 and Ongoing | CMRPC, PDA Committee |

| Actions/Next Steps | Priority (1,2,3) | Start/End | Participants |
|---|---|---|---|
| cohesiveness and focus on agriculture and working landscapes. Specific  actions include:<br><br>c.  Continue to form partnerships and use outreach to identify and secure stakeholders<br>d.  Identify current and potential future CMRPC programs and applicable funding sources that specifically offer opportunity to advance R-11 goals, strategies, policies, and actions. | | | |
| 2.3 Consider PDAs  and PIIs as focus of programmatic efforts:  Consider identified PDAs and PIIs as focus of programmatic efforts including EDA, DLTA, LPA, MassWorks, etc.<br><br>c.   Include PDA, PII, and PPA reference to DLTA application criteria and MassWorks applications.<br>d.  Assess and rank regionalization opportunities related to R11 policies and actions | | Ongoing | CMRPC, Physical Development Committee, PDA Committee |

**Strategy 3:**  Develop plans, policies, and programs to ensure that sufficient housing of all types and prices are available to current and future residents of the region (otherwise referred to as a life cycle inventory or supply). This is a critical component of supporting and enhancing economic development opportunities such as the development of PDAs.

| Actions/Next Steps | Priority (1,2,3) | Start/End | Participants |
|---|---|---|---|
| 3.1 Identify specific PDAs for housing development and rehabilitation | **2** | 2015 | CMRPC, PDA Committee |

| | | | |
|---|---|---|---|
| 3.2 Identify affordable housing opportunities specific to R-11 communities, including:<br><br>c.  Identify town and village centers where small apartment buildings and units about commercial storefronts would be appropriate.  Identify barriers to facilitating these types of projects such as regulatory and infrastructure.<br>d.  Identify a range of other affordable housing options for R-11 towns and specifically note which option(s) is most appropriate for each community.  Identify the barriers and opportunities for development of such units by town. | **3** | 2016 | CMRPC, PDA Committee |
| 3.3 Focus on the provision of residential land uses in village and town centers, where there is the potential to accommodate a greater number of units and housing types. | **2** | 2015 and Ongoing | CMRPC |
| 3.4 Diversify housing opportunities to create more residential options, reduce development pressure on Priority Protection Areas, and facilitate land conservation. | **2** | 2015 and Ongoing | CMRPC, State DHCD |
| 3.5 Focus housing in development areas with established access to corridors, in areas with transit access (East Brookfield or Brookfield) and/or in areas with the potential to support transit service (Warren). | **2** | 2015 and Ongoing | CMRPC |
| **Strategy 4:**  Identify regionally significant or priority infrastructure investments (SIIs) intended to support and advance regional priority sites (PDAs and PPAs). | | | |

| Actions/Next Steps | Priority (1,2,3) | Start/End | Participants |
|---|:---:|---|---|
| 4.1 In partnership with EOHED, identify infrastructure projects that provide the most value and interconnectivity to identified PDAs. | **2** | 2015 | CMRPC, EOHED, EEA, PDA Committee |
| 4.2 Consider infrastructure and other investments that can provide lasting value, developing community resilience, and a serving as a foundation for future efforts at economic and community development. These could include:<br><br>d. Energy systems including renewable and local generation and distribution<br>e. Local food systems including support and enhancement of local agricultural economy<br>f. Local economy including incubating or attracting new businesses and supporting the health of existing local business. | **2** | 2015 and Ongoing | |

| | | | |
|---|---|---|---|
| **Strategy 5:** Due to a predominantly agricultural and agriculture-related economy and character, this report developed a special focus on these sites which were termed "working landscapes" and informed many of the PDA and PPA selections. Next steps should include a continued emphasis on these areas. | | | |
| **Actions/Next Steps** | **Priority (1,2,3)** | **Start/End** | **Participants** |
| Improve infrastructure in support of working landscapes | **3** | | |
| Better understand farmer needs and challenges. Conduct a farmer survey to obtain the information and follow up with a more | **2** | Fall 2014 or Spring 2015 | CMRPC, UMass-Amherst |

| | | | |
|---|---|---|---|
| detailed inquiry such as a focus group. | | | |
| Partner with educational institutions and work to facilitate local agricultural education. | **3** | 2016 | CMRPC and identified partners |
| Facilitate the development of middle user and end user markets. | **2** | 2015 | CMRPC and identified partners |
| Develop prioritization of the inventory of working landscapes. | **2** | 2015 | CMRPC, PDA Committee |
| Identify and seek to implement programs and policies that support agricultural tourism (agri-tourism) opportunities where appropriate, to enhance economic opportunities for farms and other agricultural-related operations and sectors. | **1** | Summer 2014 and Ongoing | CMRPC, PDA Committee |
| Research and seek to implement best practices and programs in our regions and RPAs related to the protection of agricultural landscapes, supporting the agricultural sector of the economy, and providing greater integration of agriculture and related sectors. | **2** | 2015 and Ongoing | CMRPC |
| Develop regional and subregional agricultural action plan to establish more detailed goals, objectives, policies, and actions related to agriculture. | **2** | Summer 2014 for Subregional and 2015 for Regional | CMRPC, Subregional Agricultural Committee |
| Initiate work group or committee to further policies and actions | **1** | January 2014 and Ongoing | CMRPC |
| Seek programs and funding sources specifically tailored to identified actions in this and the agricultural action plan. | **2** | 2015 | CMRPC, Subregional and Regional Agricultural Committees |

| Partner with other RPAs and other organizations to ensure efficient and innovative programs and initiatives. | **1** | Spring 2014 | CMRPC |
|---|---|---|---|

# APPENDICES

## Appendix A: Planning Glossary and Important Acronyms

### A

**Area of Critical Environmental Concern (ACEC):** ACEC designations highlight areas where special management attention is needed to protect, and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards.

**Affordable Housing:** The generally accepted definition of affordability is for a household to pay no more than 30 percent of its annual income on housing. Families who pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care.

**Agricultural Zoning:** Agricultural zoning, including forestry zoning, restricts land uses to farming and livestock, other kinds of open-space activities and limited home building. It is sometimes used in tandem with urban growth restrictions.

**Aquifer:** A water-bearing geologic formation, sometimes confined between clay layers and sometimes on the surface. The source of ground water for drinking supplies and irrigation.

### B

**BioMap2:** BioMap2 is a program under the MA Natural Heritage and Endangered Species Program (NHESP). It combines hundreds of individual pieces of geospatial data about the state's species, ecosystems, and landscapes. These elements of biodiversity fall into one of two complementary categories, Core Habitat and Critical Natural Landscape. Core Habitat identifies key areas to ensure the long-term persistence of species of conservation concern, exemplary natural communities, and intact ecosystems across the Commonwealth.

**Brownfields:** Sites that are underutilized or not in active use, on land that is either contaminated or perceived as contaminated.

**Built Environment:** The urban environment consisting of buildings, roads, fixtures, parks, and all other improvements that form the physical character of a municipality.

### C

**Clean Energy and Climate Plan:** The Clean Energy and Climate Plan details how the State of Massachusetts will achieve its targets under its Global Warming Solutions Act (GWSA) of 2008. The law commits the state to reducing greenhouse gas (GHG) emissions 25% below 1990 levels by 2020, and 80% by 2050.

**Community Development Plan:** A plan prepared by many Massachusetts communities in 2004 with state funding that addressed housing, environmental resources, transportation, and economic development.

**Community Types:** MetroFuture identified four basic community types across Massachusetts.  While each city and town is unique, communities within each type share important characteristics that will influence their development over the coming decades.  The criteria used to define Community Types include land use and housing patterns, recent growth trends, and projected development patterns.  The four types are: Inner Core, Developing Suburbs, Maturing Suburbs, and Regional Urban Centers.

**Cluster Development:** A pattern of development in which industrial and commercial facilities and homes are grouped together on parcels of land in order to leave parts of the land undeveloped. Cluster development is often used in areas that require large lot sizes, and typically involves density transfer. Zoning ordinances permit cluster development by allowing smaller lot sizes when part of the land is left as open space.

**Comprehensive Plan:** Regional, state, or local documents that describe a community's vision for future growth. Comprehensive plans describe general plans and policies for how communities will grow and the tools that are used to guide land use decisions, and give general, long-range recommendations for community growth. Typical elements include land use, housing, transportation, environment, economic development, and community facilities.

**Community Preservation Act**: The Community Preservation Act (CPA) allows communities to create a local Community Preservation Fund to raise money through a surcharge of up to 3% of the real estate tax levy on real property for open space protection, historic preservation and the provision of affordable housing. The act also creates a significant state matching fund, which serves as an incentive to communities to pass the CPA.

**Commuter Rail:** Commuter rail refers to passenger trains operated on main line railroad track to provide employment transportation.

**Conservation Areas:** Environmentally sensitive and valuable lands protected from any activity that would significantly alter their ecological integrity, balance, or character, except in cases of overriding public interest.

# D
**Distributed Growth Scenario:** The scenario developed during the Rural-11 Prioritization Project study

process that used the entire set of locally identified priority areas to estimate future population, employment, and land use projections.

**Density:** The average number of people, families, or housing units on one unit of land. Density is also expressed as dwelling units per acre.

Department of Agricultural Resources, Massachusetts (MDAR) – An agency of the Executive Office of Energy and Environmental (EOEEA) Affairs that helps to keep Massachusetts' food supply safe and secure

## E

**Economic Opportunity Area (EOA):** An area or several areas within a designated Massachusetts Economic Target Area of particular need and priority for economic development.

**Ecosystem:** The species and natural communities of a specific location interacting with one another and with the physical environment.

**Environmental Justice:** Is based on the principle that all people have a right to be protected from environmental pollution and to live in and enjoy a clean and healthful environment. Environmental justice is the equal protection and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies and the equitable distribution of environmental benefits.

**Endangered**: Species that are in danger of extinction. It also is a category that denotes protection under federal law (Endangered Species Act).

**Executive Office of Energy and Environmental Affairs (EOEEA)** – A Secretariat level office of the Commonwealth of Massachusetts that preserves open space and working landscapes; enforces pollution laws; reviews the environmental impact of major real estate and infrastructure developments; enhances the state's role in energy conservation and production, and provides opportunities for outdoor recreation and access at the parks, beaches, and farms. Its agencies: Department of Agricultural Resources (DAR), Department of Conservation and Recreation (DCR), Department of Environmental Protection (DEP), Department of Energy Resources, Department of Fish and Game, Department of Public Utilities.

**Executive Office of Housing and Economic Development (EOHED)** - A Secretariat level office of the Commonwealth of Massachusetts that assists the creation of homes and jobs in the Commonwealth by helping small businesses grow and by providing housing opportunities. Its agencies

**include:** Department of Housing and Community Development (DHCD), Massachusetts Office of Business Development (MOBD), Office of Consumer Affairs and Business Regulation, Massachusetts Permit Regulatory Office (MPRO), Office of Performance Management and Oversight (OPMO),Massachusetts Office of International Trade and Investment (MOITI), and Massachusetts Office of Travel and Tourism (MOTT).

## F

**Flood Plain:** The land adjacent to a water body stream, river, lake or ocean that experiences occasional flooding.

**Freight Rail:** Trains used to ship cargo through rail systems.  US Department of Transportation forecasts an 88% rise in rail freight demand by 2035.

## G

**GIS (Graphic Information Systems):** GIS technology is used to develop maps that depict resources or features such as soil types, population densities, land uses, transportation corridors, waterways, etc. GIS computer programs link features commonly seen on maps (such as roads, town boundaries, water bodies) with related information not usually presented on maps, such as type of road surface, population, type of agriculture, type of vegetation, or water quality information. A GIS is a unique information system in which individual observations can be spatially referenced to each other.

**Global Warming Solutions Act:** In August 2008, Massachusetts Governor Deval Patrick signed into law the Global Warming Solutions Act (GWSA), making Massachusetts one of the first states in the nation to move forward with a comprehensive regulatory program to address Climate Change.

**GreenDOT Initiative:** In 2010 The Massachusetts Department of Transportation launched GreenDOT. GreenDOT has three goals: reduce greenhouse gas (GHG) emissions; promote the healthy transportation options of walking, bicycling, and public transit; and support for smart growth development.

**Greenfields:** Newly developed commercial real estate on what was previously undeveloped open space.

**Greenhouse Gas:** Some greenhouse gases, which contribute to the greenhouse effect, occur naturally in the atmosphere while others result from human activities such as the burning of fossil fuels. Greenhouse gases include carbon dioxide, methane, nitrous oxide, and ozone.

**Greenway:** A linear open space; a corridor composed of natural vegetation. Greenways can be used to create connected networks of open space that include traditional parks and natural areas.

**Groundwater:** All water below the surface of the land. It is water found in the pore spaces of bedrock or soil, and it reaches the land surface through springs or it can be pumped using wells.

**Growth District Initiative:** The Executive Office of Housing and Economic Development will partner with municipalities that have identified one or more areas within their communities as being appropriate locations for significant new growth, whether commercial, residential or mixed-use. Eligible areas must be located in places with existing infrastructure, access to transportation and not be located on environmentally sensitive land.

# H

**Habitat:** Living environment of a species, that provides whatever that species needs for its survival, such as nutrients, water and living space.

**Housing Diversity:** A variety of houses in type, size, tenure and location – can increase housing affordability, while accommodating a variety of housing needs.

**Housing Element:** A comprehensive assessment of current and projected housing needs for all economic segments of the community. It sets forth local housing policies and programs to implement those policies and is one of the required elements of comprehensive plan.

**Housing Production Plan**: A Housing Production Plan (HPP) is a community's proactive strategy for planning and developing affordable housing by creating a strategy to enable it to meet its affordable housing needs in a manner consistent with the Chapter 40B statute and regulations; and producing housing units in accordance with the HPP.

**Housing Trust Funds**: Housing trust funds are a separate funding source established by a municipality to provide a revenue source that supports the creation and preservation of affordable housing for the benefit of low and moderate income households.

**Historic Area:** An area or building in which historic events occurred, or one which has special value due to architectural or cultural features relating to the heritage of the community. Elements in historic areas have significance that necessitates preservation or conservation.

# I

**Impaired Streams:** A stream is impaired when it does not meet established water quality goals. These goals are typically a measure of stream's health, flow and ability to support a type and diversity of aquatic life, such as fish and aquatic insects.

**Impervious Surface:** Any surface through which rainfall cannot pass or be effectively absorbed. (Roads,

buildings, paved parking lots, sidewalks etc.)

**Incentive Zoning:** Provides for "give and take" compromise on zoning restrictions, allowing for more flexibility to provide environmental protection. Incentive zoning allows a developer to exceed zoning ordinance limitations if the developer agrees to fulfill conditions specified in the ordinance. The developer may be allowed to exceed height limits by a specified amount in exchange for providing open spaces or plazas adjacent to the building.

**Inclusionary zoning:** A system that requires a minimum percentage of lower and moderate income housing to be provided in new developments. Inclusionary programs are based on mandatory requirements or development incentives, such as density bonuses.

**Individual Residential Wells:** A well-intended to produce potable water for human consumption at a single residence.

**Infill Development:** Infill projects use vacant or underutilized land in previously developed areas for buildings, parking, and other uses.

**Infrastructure:** Water and sewer lines, roads, urban transit lines, schools and other public facilities needed to support developed areas.

## L

**Land Trusts:** Nonprofit organizations interested in the protection of natural resources and historic areas. Activities include public education, purchase and coordination of conservation easements, and planning services.

**Land Use:** The manner in which a parcel of land is used or occupied.

**Level of Service (LOS):** A qualitative measure describing operational conditions within a traffic stream in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Level A denotes the best traffic conditions while Level F indicates gridlock. An Environmental Impact Report (EIR) for a development proposal evaluates the impact the development will have on the LOS standards for police, fire, utilities, parks, schools and traffic in the affected area.

## M

**Massachusetts General Law Chapter 40B:** The Comprehensive Permit Act is a Massachusetts law which allows developers of affordable housing to override certain aspects of municipal zoning bylaws and other requirements. The Act consists of Massachusetts General Laws Chapter 40B, Sections 20 through

23, along with associated regulations.  Chapter 40B was enacted to address the shortage of affordable housing statewide by reducing barriers created by local municipal building permit approval processes, local zoning, and other restrictions. Its goal is to encourage the production of affordable housing in all communities throughout the Commonwealth.

**MassGIS:** The Commonwealth's Office of Geographic and Environmental Information, within the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA). Through MassGIS, the Commonwealth has created a comprehensive, statewide database of spatial information for environmental planning and management.

**Master Plan:** A statement, through text, maps, illustrations or other forms of communication, that is designed to provide a basis for decision making regarding the long term physical development of the municipality.  Massachusetts General Laws Chapter 41, Section 81D establishes the requirements for a Master Plan.

**Mixed Use Development:** Development that is created in response to patterns of separate uses that are typical in suburban areas necessitating reliance on cars. Mixed use developments include residential, commercial, and business accommodations in one area.

**Mode/Modal Split:** A term that describes how many people use alternative forms of transportation. Frequently used to describe the percentage of people using private automobiles as opposed to the percentage using public transportation.

# O

**Open Space:** Used to describe undeveloped land or land that is used for recreation. Farmland as well as all natural habitats (forests, fields, wetlands etc.) is lumped in this category.

**Open Space Residential Design (OSRD):** A form of residential subdivision that maximizes resource protection and conservation of natural areas through the use of design strategies that result in permanent open space preservation.

**Overlay Districts:** Zoning districts in which additional regulatory standards are superimposed on existing zoning. Overlay districts provide a method of placing special restrictions in addition to those required by basic zoning ordinances.

# P

**Photovoltaic (PV):** Literally, "light" (photo) and "electricity" (voltaic). The class of equipment used to generate electricity directly from sunlight.

**Plan:** A statement of policies, including text and diagrams, setting forth objectives, principles, standards, and plan proposals for the future physical development of the city or county.

**Planning:** The process of setting development goals and policy, gathering and evaluating information, and developing alternatives for future actions based on the evaluation of the information.

**Prime Agricultural Soils:** Soils considered highly suitable for agricultural activity. Prime farmland has the soil quality, growing season, and moisture supply needed for the agricultural productivity to sustainably produce high yields of crops when treated and managed according to acceptable farming methods.

**Priority Development Sites:** Under Massachusetts General Law, Chapter 43D, all permit reviews and final decisions shall be completed within 180 days of a determination that an application is complete. Parcels that are zoned for commercial or industrial development and are capable of the development or redevelopment of a building of at least 50,000 square feet gross floor area are eligible.

**Priority Habitat:** Priority habitat is a habitat type with unique or significant value to one or more species. An area classified and mapped as priority habitat must have one or more of the following attributes: comparatively high fish or wildlife density; comparatively high fish or wildlife species diversity; fish spawning habitat; important wildlife habitat; important fish or wildlife seasonal range; important fish or wildlife movement corridor; rearing and foraging habitat; important marine mammal haul-out; limited availability; high vulnerability to habitat alteration; unique or dependent species; or shellfish bed.

# R

**Registry of Motor Vehicles Data:** 16 million Registry of Motor Vehicles inspection records, 2005 -2007 that were processed, geocoded, and analyzed to determine aggregate-level household vehicle travel distances.  The current vehicle fleet mileage figures were obtained from the odometer readings

**Recharge:** Water that infiltrates into the ground, usually from above, that replenishes groundwater reserves, provides soil moisture, and affords evapotranspiration.

**Regional Planning Agency**: Regional Planning Agencies (RPAs) are public organizations that encompass groupings of cities and towns and serve these municipalities by dealing with issues and needs that cross governmental and other boundaries through planning, policymaking and technical assistance.

**Regional Transit Authority:** A public operator of one or more of the following:   bus, subway, commuter rail and ferry systems.

**Rehabilitation:** In communities with a large stock of older housing or other structures that could lend themselves more easily to conversion into residential units, rehabilitation can be a very affordable and environmentally-friendly way to provide more housing, commercial areas, and offices.

**Runoff:** The water that flows off the surface of the land, ultimately into our streams and water bodies, without being absorbed into the soil.

## S

**Smart Growth:** Well-planned development that protects open space and farmland, revitalizes communities, keeps housing affordable and provides more transportation choices.

**Smart Growth District**: Smart Growth District are overlay zoning districts established under Chapter 40R of the Massachusetts General Laws to promote housing production and, more generally, smart growth development. Chapters 40R and 40S both provide financial incentives to communities to adopt these new zoning districts.

**Solar Power (or Energy):** Use of sunlight, or solar energy, to heat and light buildings, generate electricity (using solar photovoltaic systems - PV cells/panels), heat hot water, and for a variety of commercial and industrial uses.

**Special Districts:** Geographic areas in which fees or taxes are collected to fund investments or services benefiting properties within the district.

**State Tax Incentives:** Massachusetts offers tax incentives to individuals and business that install renewable energy systems at their homes or offices. This section provides a summary of these incentives and who to contact for more information.

**Stream Corridor:** The area (containing wetlands, flood plains, woodlands, unique habitats, and steep slopes) which lies between relatively level uplands and stream banks and through which water, draining from the uplands, flows and is naturally cleansed and stored. Base flow for streams comes from ground water as springs and seeps.

**Subdivision:** A subdivision occurs as the result of dividing land into lots for sale or development.

**Subdivision Rules and Regulations:** Procedures, requirements, and provisions governing the subdivision of land that is specified in formal Rules and Regulations promulgated by a city or town under the authority vested in the Planning Board by section 81-Q of Chapter 41 of the General Laws of Massachusetts.

**Subsidized Housing Inventory**: The Subsidized Housing Inventory (SHI) is used to measure a community's stock of low-or moderate-income housing for the purposes of M.G.L. Chapter 40B, the Comprehensive Permit Law. While housing developed under Chapter 40B is eligible for inclusion on the inventory, many other types of housing also qualify to count toward a community's affordable housing stock.

# T

**Traffic Analysis Zone (TAZ):** A unit commonly used in transportation planning models to define where trips begin and end. TAZs include information on population, employment and households, and can vary in size so that they can contain similar amounts of people making trips.

**Trip Generation:** The first step in the conventional four-step transportation forecasting process (followed by trip distribution, mode choice, and route assignment), widely used for forecasting travel demands. It predicts the number of trips originating in or destined for a particular traffic analysis zone.

**Transit-Oriented Development (TOD):** The development of housing, commercial space, services, and job opportunities in close proximity to public transportation. Reduces dependency on cars and time spent in traffic, which protects the environment and can ease traffic congestion, as well as increasing opportunity by linking residents to jobs and services.

**Transit Nodes:** Stops along a public transportation route where people board and disembark, often where one or more routes intersect with each other. These sites can provide ideal locations for mixed-use development as well as transit-oriented development.

**Transportation demand management strategies (TDM):** TDM is a general term for strategies that result in more efficient use of transportation resources, including incentives to reduce driving, use alternative options, and improve transit.

**Transportation Reform Act Modernizing the Transportation Systems of the Commonwealth of Massachusetts:** In June 2009, Governor Patrick signed Chapter 25 of the Acts of 2009, "An Act Modernizing the Transportation Systems of the Commonwealth of Massachusetts, (as amended by Chapter 26 of the Acts of 2009) creating a streamlined Massachusetts Department of Transportation, which includes the Registry of Motor Vehicles, the Highway Division and the Massachusetts Bay Transportation Authority (MBTA).

# U

**USGS (United States Geological Survey):** A federal agency which provides mapping of topography, aquifer levels, and areas where aquifers are recharged.

## V

**Vehicle Miles Traveled (VMT):** A measure of the extent of motor vehicle operation; the total number of vehicle miles traveled within a specific geographic area over a given period of time. The calculation of Vehicle Miles Traveled daily on all of the roadways within a community. This calculation includes people traveling within a community, as well as those traveling in and out of a community.

## W

**Wastewater:** Water that has been adversely affected in quality by human influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations. In the most common usage, it refers to the municipal wastewater that contains a broad spectrum of contaminants resulting from the mixing of wastewaters from different sources.

**Watershed:** The geographic area which drains into a specific body of water. A watershed may contain several sub-watersheds.

**Wetlands:** Area having specific hydric soil and water table characteristics supporting or capable of supporting wetlands vegetation.

**Workforce Housing:** Workforce housing is generally understood to mean any form of housing, including ownership of single or multi-family homes, or occupation of rental units, that constitutes affordable housing for individuals and heads of household who are gainfully employed, and not typically understood to be the target of affordable housing programs.

## Z

**Zoning:** Classification of land in a community into different areas and districts. Zoning is a legislative process that regulates building dimensions, density, design, placement and use within each district.

The glossary above is a modified version of the glossary from the Executive Office of Energy and Environmental Affairs (EOEEA) Smart Growth/Smart Energy Toolkit:
http://www.mass.gov/envir/smart_growth_toolkit/pages/glossary.html

## Appendix B: Local Public Meeting Dates

The local public meetings, typically as part of a Board of Selectmen's meeting or a Planning Board meeting, were held in April through July 2013 on the following dates:

| Municipality | Date |
|---|---|
| Barre | June 11, 2013 |
| Brookfield | July 3, 2013 |
| East Brookfield | July 17, 2013 |
| Hardwick | April 22, 2013 |
| New Braintree | May 28, 2013 |
| North Brookfield | May 21, 2013 |
| Oakham | June 24, 2013 |
| Princeton | June 5, 2013 |
| Rutland | June 25, 2013 |
| Warren | June 12, 2013 |
| West Brookfield | May 28, 2013 |
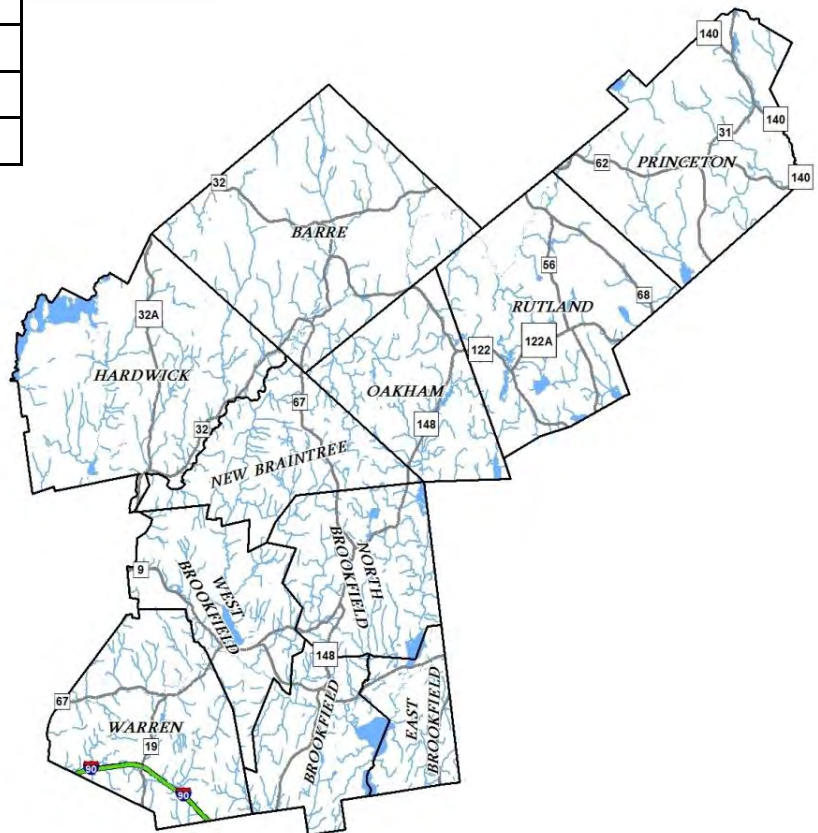
## Appendix C: Public Presentations

Two regional public meetings were held as part of the Rural-11 Prioritization Project.  Both public meetings were held at the New Braintree Town Offices Community Meeting Room.  The first meeting was on June 26, 2013 and attracted almost 40 participants. The second meeting was on September 25, 2013 and attracted over 80 participants. Copies of these presentations and supporting materials are available on the CMRPC website online at the http://www.cmrpc.org/community-development-documents.

## Appendix D: Local Maps

Locally-Identified Priority Areas and Maps with Region IDs

| Barre | | |
|---|---|---|
| ID | Title | Type |
| 21-1 | Barre Common (North, Middle and South) | Development |
| 21-2 | South Barre Mill Village and Barre Plain Commercial Industrial Areas (including Wildwood Reload as a Freight Transit facility) | Development |
| 21-3 | Prince River Corridor Commercial Sites | Development |
| 21-4 | Pine Ridge Snow Park (former) | Development |
| 21-5 | Route 32/Route 122 Business Commercial Area | Development |
| 21-6 | Rockwerx | Development |
| 21-7 | Insight Meditation Center Campus | Development |
| 21-8 | Stetson Home Campus | Development |
| 21-9 | Possible Housing Development opportunities on Town Farm Rd. | Development |
| 21-10 | Barre Landfill/National Grid | Development/Preservation |
| 21-11 | Felton Field | Preservation |
| 21-12 | Prince River Corridor | Preservation |
| 21-14 | Mid State Trail | Preservation |
| 21-15 | Millers Beach | Preservation |
| 21-16 | Morrisette Farm | Preservation |
| 21-17 | Ware River, improved access and dam usage | Preservation |
| 21-18 | Moose Brook Core Habitat | Preservation |
| 21-19 | Old Barre Reservoir | Preservation |
| 21-20 | International Snowmobile Trail | Preservation |
| 21-A | South Barre Water Main Project | Infrastructure |
| 21-B | Route 122 Byway Improvements and Signage | Infrastructure (Transportation) |
| 21-C | Drainage improvement project | Infrastructure |
| 21-D | Three (3) phase electric | Infrastructure |
| 21-E | Information Technology infrastructure | Infrastructure |
| 21-F | Increased sewer capacity | Infrastructure |
| 21-G | Mass Central Rail Trail | Infrastructure (Preservation/Transportation) |

| Brookfield | | |
|---|---|---|
| ID | Title | Type |
| 45-1 | Campground | Development/Preservation |
| 45-2 | Wolf Swamp | Development/Preservation |
| 45-3 | Route 9/Central Street business area (including Gavett Bldg (old shoe factory) | Development |
| 45-4 | Finney's - Brownfield site | Development |
| 45-5 | River Frontage (including Spencer Plating 72 Mill St. and Whites Landing 6 Fiskdale Rd, landings, boat launches, town garage and park) | Development |
| 45-6 | 148 Corridor | Development |
| 45-7 | Area on  Route 9 from Town line to Quaboag St. | Development |
| 45-8 | Quaboag River Water Trail | Preservation |
| 45-9 | Elm Hill Farm Complex | Preservation |
| 45-10 | Historic Trail passes through Devil's Elbow | Preservation |
| 45-11 | Bannister Common/Brookfield Town Common Historic District | Preservation |
| 45-12 | Overlook Farm | Preservation |
| 45-13 | Richardson Farm | Preservation |
| 45-14 | Jeppson Farm | Preservation |
| 45-15 | Quacumquasit Pond/ Brick Works | Preservation |
| 45-16 | Town Hall Preservation | Preservation |
| 45-A | Water quality in Quaboag Pond, Quaboag River, and 7 mile River | Infrastructure |
| 45-B | Public access to Quaboag Pond and River | Infrastructure |
| 45-C | Route 9 Corridor (access to markets) | Infrastructure (Transportation) |
| 45-D | Upper River Street Bridge Replacement (on 2014 TIP) | Infrastructure (Transportation) |
| 45-E | Sewer Expansion from Village Center  to Quaboag St. | Infrastructure |
| 45-F | Information Technology infrastructure | Infrastructure |

| East Brookfield | | |
|---|---|---|
| ID | Title | Type |
| 84-1 | Hodgkins School and Surrounding area. | Development |
| 84-2 | Depot Square including site of former Railroad Station, Veterans Park, Old Town Offices/Keith Block, Shoe Factory/Vizard's Hall | Development |
| 84-3 | Route 49 Commercial Area | Development |
| 84-4 | Mixed Use on Route 9 from Lashaway Dr. to Blaine Ave. | Development |
| 84-5 | Town Complex | Development |
| 84-6 | Grey Ledge and High Rocks area | Preservation |
| 84-7 | Water Well Protection Areas | Preservation |
| 84-8 | Water Resources including Lake Lashaway, Quaboag and Quacumquasit Ponds, East Brookfield River, Seven Mile River, Marshes, Swamps | Preservation |
| 84-A | Route 9 improvements | Infrastructure (Transportation) |
| 84-B | Bridge at South Pond (Quacumquasit) | Infrastructure (Transportation) |
| 84-C | Access to Route 49 from Adams Road and Flagg Road | Infrastructure (Transportation) |
| 84-D | Sidewalks around Lake Lashaway to School and to Town Beach (improved walkability) | Infrastructure (Transportation) |
| 84-E | Storm water drainage controls | Infrastructure |
| 84-F | Water quality in Quaboag Pond and the River | Infrastructure |
| 84-G | Municipal Water improvements | Infrastructure |

| Hardwick | | |
|---|---|---|
| ID | Title | Type |
| 124-1 | Hardwick Knitters Mill | Development |
| 124-2 | Music Camp near Hardwick Pond | Development |
| 124-3 | Landfill | Development |
| 124-4 | Hardwick Common and Village Historic District | Development |
| 124-5 | Mill Overlay District (includes all 3 mills) | Development |
| 124-6 | Wheelwright Village District | Development |
| 124-7 | Industrial Area | Development |
| 124-8 | Wheelwright Mill | Development |
| 124-9 | Commercial District | Development |
| 124-10 | Dougal Range | Preservation |
| 124-11 | Moose Brook Corridor | Preservation |
| 124-12 | Old Swimming Hole | Preservation |
| 124-13 | Slab City | Preservation |
| 124-14 | Gate 43 to the Quabbin Reservoir | Preservation |
| 124-15 | Ware River Corridor | Preservation |
| 124-16 | Muddy Brook and Hardwick Pond | Preservation |
| 124-A | Cell tower | Infrastructure |
| 124-B | Substandard/Deficient Bridges (3) near Quabbin Res. Creamery Rd. is a one lane bridge to New Braintree | Infrastructure (Transportation) |
| 124-C | Sewer on Lower Greenwich Road | Infrastructure |
| 124-D | Water and Sewer to the Commercial District | Infrastructure |
| 124-E | Three (3) phase electric | Infrastructure |
| 124-F | Information Technology infrastructure (Town wide Broadband Coverage) | Infrastructure |
| 124-G | Mass Central Rail Trail | Infrastructure (Preservation /Transportation) |

| New Braintree | | |
|---|---|---|
| ID | Title | Type |
| 202-1 | Tanner-Hiller Airport | Development |
| 202-2 | Glass and More | Development |
| 202-3 | Brick Building in Town Center (Old Cheese Factory) | Development |
| 202-4 | Cusky  Pond | Preservation |
| 202-5 | Wheeler's Surprise (historic) | Preservation |
| 202-6 | Barn on Fish and Wildlife Land | Preservation |
| 202-7 | Ware River Corridor | Preservation |
| 202-8 | Brooks Pond and surrounding aquifer | Preservation |
| 202-9 | Camp Putnam | Preservation |
| 202-10 | Ware/Winnimussett Valley Aquifer | Preservation |
| 202-11 | Core Habitat | Preservation |
| 202-12 | Congregational Church | Preservation |
| 202-A | Route 67 improvements | Infrastructure (Transportation) |
| 202-B | Ravine Rd. and McEvoy Rd to Airport improvements | Infrastructure (Transportation) |
| 202-C | Barre Cut Off and West Brookfield Rd. improvements | Infrastructure (Transportation) |
| 202-D | Intersection of Route 67 and Ravine Rd. improvements | Infrastructure (Transportation) |
| 202-E | Fire Suppression | Infrastructure |
| 202-F | Information Technology infrastructure | Infrastructure |
| 202-G | Three (3) phase electric | Infrastructure |
| 202-H | Mass Central Rail Trail | Infrastructure (Preservation /Transportation) |

| North Brookfield | | |
|---|---|---|
| ID | Title | Type |
| 212-1 | Prospect and Winter Street Industrial District | Development |
| 212-2 | East Brookfield Road Industrial District near Forget Me Not Brook | Development |
| 212-3 | E. Brookfield Rd. Ind. Dist. South of Con Warren & Donovan Rds. | Development |
| 212-4 | Crooks Road Industrial District | Development |
| 212-5 | North Brookfield Business Center | Development |
| 212-6 | Former Frank Cooke Optical | Development |
| 212-7 | General Business District north of Con Warren & Donovan Rds. | Development |
| 212-8 | South Main Street General Business District | Development |
| 212-9 | Oakham Road Central Business District | Development |
| 212-10 | Downtown Central Business | Development |
| 212-11 | Bates Street Farm Area | Preservation |
| 212-12 | Coys Brook Corridor and adjacent Core Habitat areas | Preservation |
| 212-13 | Bates Observatory | Preservation |
| 212-14 | 5 mile River and Brooks Pond | Preservation |
| 212-15 | Town Forest | Preservation |
| 212-16 | Horse Pond and Doane Pond | Preservation |
| 212-17 | Lake Lashaway | Preservation |
| 212-18 | Perry Pond | Preservation |
| 212-19 | Oakham Rd. Core Habitat | Preservation |
| 212-20 | New Braintree Rd. Core Habitat | Preservation |
| 212-21 | Barnett Rd. Core Habitat | Preservation |
| 212-22 | Howe Rd. Core Habitat | Preservation |
| 212-23 | Mill Rd. /Sucker Brook Core Habitat | Preservation |
| 212-A | East Brookfield Road Improvements (former Massworks App) | Infrastructure (Transportation) |
| 212-B | Flood Control improvements | Infrastructure |
| 212-C | New Braintree Road  (Route 67) improvements | Infrastructure (Transportation) |
| 212-D | Railroad | Infrastructure (Transportation) |
| 212-E | Sewer collection system | Infrastructure |
| 212-F | Water distribution (aging infrastructure) | Infrastructure |

| 212-G | Stormwater management | Infrastructure |
| 212-H | Information Technology infrastructure (Broadband) | Infrastructure |

| Oakham | | |
|---|---|---|
| ID | Title | Type |
| 222-1 | Auto Recycling Area | Development |
| 222-12 | National Grid Land/Barre Landfill | Development/Preservation |
| 222-2 | Cold Brook Springs Railroad Depot Site | Preservation |
| 222-3 | Oakham Town Common | Preservation |
| 222-4 | Mid State Trail | Preservation |
| 222-5 | Rare Species Habitat NW of North Brookfield Road and south of New Braintree Road | Preservation |
| 222-6 | Crocker Nye Spring | Preservation |
| 222-7 | Watershed Protection | Preservation |
| 222-8 | Cistercian Abbey | Preservation |
| 222-9 | John Berringer land | Preservation |
| 222-10 | Adams's Pond | Preservation |
| 222-11 | Unprotected Biohabit areas | Preservation |
| 222-A | Route 122 Byway Improvements and Signage | Infrastructure (Transportation) |
| 222-B | Mass Central Rail Trail | Infrastructure (Preservation/Transportation) |
| 222-C | Route 148 Reconstruction, paving and stormwater | Infrastructure (Transportation) |
| 222-D | Town Hall Road/ Drive | Infrastructure |
| 222-E | Old Turnpike Road reconstruction | Infrastructure (Transportation) |
| 222-F | Information Technology Infrastructure | Infrastructure |

| Princeton | | |
|---|---|---|
| ID | Title | Type |
| 241-1 | Worcester Road Business District | Development |
| 241-2 | East Princeton Village | Development |
| 241-3 | Landfill for solar | Development |
| 241-4 | Hubbardston Rd. Commercial Area | Development |
| 241-5 | Mechanics Hall | Preservation |
| 241-6 | Superintendent's House | Preservation |
| 241-7 | Mid State Trail | Preservation |
| 241-8 | Water Resources (Quinapoxet, Wachusett Lake and other ponds) | Preservation |
| 241-9 | Princeton Town Center (Including Bagg Hall and Public Library) | Preservation |
| 241-10 | Boylston Park | Preservation |
| 241-11 | Halls Farm | Preservation |
| 241-12 | Smith Farm | Preservation |
| 241-13 | Biomap 2 | Preservation |
| 241-14 | Unprotected Ridgelines | Preservation |
| 241-15 | Former Gates Property | Preservation |
| 241-A | Three (3) phase electric | Infrastructure |
| 241-B | Route 140 | Infrastructure (Transportation) |
| 241-C | Information Technology infrastructure | Infrastructure |

| Rutland | | |
|---------|---|---|
| ID | Title | Type |
| 257-1 | Former Rutland Heights Hospital Site | Development |
| 257-2 | Rutland Center | Development |
| 257-3 | Four Corners | Development |
| 257-4 | North Rutland | Development |
| 257-5 | Rutland Plaza | Development |
| 257-6 | Route 68 business zone | Development |
| 257-7 | Route 56 business area | Development |
| 257-8 | Glenwood-Route 122A Farmland OS | Preservation |
| 257-10 | Pine Hill Watershed Farmland | Preservation |
| 257-11 | Quinapoxet Reservoir  Watershed Farmland | Preservation |
| 257-12 | Treasure Valley | Preservation |
| 257-13 | Muschopauge Pond | Preservation |
| 257-A | Route 122 Byway Improvements and Signage/ Including Commuter Parking area at 122 and 122A | Infrastructure (Transportation) |
| 257-B | Upgrade of water  and sewer lines to Maple and Central Tree Rd. | Infrastructure |
| 257-C | Route 56 Upgrades for Truck Traffic | Infrastructure (Transportation) |
| 257-D | Backup water supply (Moulton Pond) | Infrastructure |
| 257-E | Rutland Center Roadway geometry and pedestrian improvements | Infrastructure (Transportation) |
| 257-F | Holden Route 122A By pass (proposed, suggested) | Infrastructure (Transportation) |
| 257-G | Mass Central Rail Trail | Infrastructure (Preservation/Transportation) |

| Warren | | |
|---|---|---|
| ID | Title | Type |
| 311-1 | Warren Center Village | Development |
| 311-2 | West Warren Village | Development |
| 311-3 | Wrights Mill Area | Development |
| 311-4 | Land near Mass Turnpike in West Warren/Gilbert Road Area | Development |
| 311-5 | Warren Pumps | Development |
| 311-6 | Transfer Station | Development |
| 311-7 | Former Town Hall in Center Village | Development |
| 311-8 | Comins Pond | Preservation |
| 311-9 | Quaboag River and Water Trail (including Quaboag River Mill Sites and Dams) and Lucy Stone Park | Preservation |
| 311-10 | Old Bay Path Indian Trail | Preservation |
| 311-11 | Devil's Peak | Preservation |
| 311-12 | Coy Hill | Preservation |
| 311-13 | Mark's Mountain | Preservation |
| 311-14 | Shephards Farm | Preservation |
| 311-15 | Lucy Stone Park | Preservation |
| 311-A | Mass Turnpike Interchange | Infrastructure (Transportation) |
| 311-B | Route 67 | Infrastructure (Transportation) |
| 311-C | Sewer Treatment Plant Upgrade | Infrastructure |
| 311-D | Aging water distribution system/pipes/ water mains | Infrastructure |
| 311-E | Storm water requirements | Infrastructure |
| 311-F | Information Technology infrastructure | Infrastructure |
| 311-G | Public Transit | Infrastructure (Transportation) |

| West Brookfield | | |
|---|---|---|
| ID | Title | Type |
| 323-1 | West Brookfield Center Historic District/Town Common | Development |
| 323-2 | Western Railroad Depot Area | Development |
| 323-3 | Town Landfill (closed) and Adjacent Property | Development |
| 323-4 | Corset Factory | Development |
| 323-5 | Grange Building | Development |
| 323-6 | Brookhaven Lake Housing Development | Development |
| 323-7 | Grist Mill Sites - Tyler Saw, Pynchon, Lamberton Brook, Gilbert Saw | Preservation |
| 323-8 | Quaboag Plantation Settlement | Preservation |
| 323-9 | Old Bay Path Indian Trail | Preservation |
| 323-10 | Wickaboag Pond and its tributaries (Sucker Brook and Mill Brook) | Preservation |
| 323-11 | Quaboag River Greenway and Water Trail | Preservation |
| 323-12 | Unprotected parts of Coy Hill | Preservation |
| 323-13 | Unprotected parts of Whortleberry Hill | Preservation |
| 323-14 | Unprotected parts of Ragged Hill | Preservation |
| 323-A | Upgrade Route 9 | Infrastructure (Transportation) |
| 323-B | Brookhaven Dam | Infrastructure |
| 323-C | Expand water service up Wigwam Rd. and Ragged Hill Rd. | Infrastructure |
| 323-D | Expand three (3) phase electric | Infrastructure |
| 323-E | Information Technology infrastructure | Infrastructure |
| 323-F | Water system aging pipes | Infrastructure |

## Appendix E: Regional Screening - GIS Data for Initial Assessment

| Criterion | Description | Source |
|---|---|---|
| Housing | Intersects a residential land use | MassGIS 2005 Land Use data layer |
| Developed | Intersects a developed land use | MassGIS 2005 Land Use data layer |
| Farms | Intersects an agro land use (Crop Land, Orchard, Pastures, Nurseries and Cranberry Bogs) | MassGIS 2005 Land Use data layer |
| EJ_Pop | Within 1/2 mi. of an environmental justice population | MassGIS 2003 US 2000 Census Environmental Justice Populations data layer |
| CODA | Intersects a MetroFuture Identified Community Oriented Development Area (CODA) [defined using traffic analysis zones (TAZ)] | MAPC 2008 CODA data layer |
| Walking | Within 1/2 mi. of a sidewalk or off-road bike/walking path | MAPC 2009 Sidewalk data layer |
| Grow_Dist | Intersects a state-designated growth district | EOHED 2011 Growth District Initiative data layer |
| Historic | Intersects an historic place | MassGIS Historic Places data layer |
| Transit | Within 1/2 mi. of a public bus line, commuter rail station, or commuter shuttle bus stop | MassDOT/CTPS 2008 Commuter Rail and Station data layer MassGIS/CTPS 2006 data layer |
| Chap_43D | Intersects a 43D site | EEA 2011 43D data layer |
| Chap_40R | Intersects a 40R district | EEA 2011 40R data layer |
| Pri_Hab | Intersects a priority habitat of rare species | NHESP 2008 Priority Habitats of Rare Species data layer |
| Crit_Env | Intersects an area of critical environmental concern | MassGIS 2009 Areas of Critical Environmental Concern data layer |
| CH_AqCore | Intersects the BioMap2 Core Habitat - Aquatic Core layer | NHESP 2011 BioMap2 Core Habitat data layer |
| CH_Forest | Intersects the BioMap2 Core Habitat - Forest Core layer | NHESP 2011 BioMap2 Core Habitat data layer |
| CH_PNC | Intersects the BioMap2 Core Habitat - Priority Natural Communities layer | NHESP 2011 BioMap2 Core Habitat data layer |
| CH_SOCC | Intersects the BioMap2 Core Habitat - | NHESP 2011 BioMap2 Core Habitat data |

| Criterion | Description | Source |
|-----------|-------------|--------|
| | Species of Conservation Concern layer | layer |
| CH_Vernal | Intersects the BioMap2 Core Habitat - Vernal Pool Core layer | NHESP 2011 BioMap2 Core Habitat data layer |
| CH_Wetland | Intersects the BioMap2 Core Habitat - Wetlands layer | NHESP 2011 BioMap2 Core Habitat data layer |
| CNL_AB | Intersects the BioMap2 Critical Natural Landscape - Aquatic Buffer layer | NHESP 2011 BioMap2 Critical Natural Landscape data layer |
| CNL_LB | Intersects the BioMap2 Critical Natural Landscape - Landscape Blocks layer | NHESP 2011 BioMap2 Critical Natural Landscape data layer |
| CNL_CAA | Intersects the BioMap2 Critical Natural Landscape - Coastal Adaptation Analysis layer | NHESP 2011 BioMap2 Critical Natural Landscape data layer |
| CNL_TF | Intersects the BioMap2 Critical Natural Landscape - Tern Foraging layer | NHESP 2011 BioMap2 Critical Natural Landscape data layer |
| CNL_WB | Intersects the BioMap2 Critical Natural Landscape - Wetland Buffer layer | NHESP 2011 BioMap2 Critical Natural Landscape data layer |
| Wellhead | Intersects Zone II or IWPA wellhead protection areas | DEP 2011 Wellhead Protection Areas data layer |
| Open_Sp | Intersects permanently protected open space | MassGIS/MAPC/CMRPC Open Space data layers |
| Aquifer | Intersects a high or medium yield aquifer | MassGIS 2007 Aquifers data layer |
| Flood | Intersects a 100-year floodplain | FEMA Floodplain data layer (multiple years) |
| Trail | Intersects an off-road bike/walking trail | MAPC 2011 Trails data layer |
| Wetland | Intersects a wetland | DEP 2011 Wetlands data layer |
| SWSPA | Intersects a surface water supply protection area | Mass GIS 2011 Surface Water Supply Protection Areas data layer |
| Prime_Soil | Intersects prime farmland soils (All Areas Prime Farm Land and Farm of Statewide Importance) | MassGIS 2010 NRCS SSURGO-Certified Soils data layer |
| Greenway | Intersects a greenway (Commonwealth Connections) | Based on Data from 2003 MA "Commonwealth Connections" report |
| Vernal | Intersects a vernal pool | NHESP 2011 Certified Vernal Pools data layer |
| Res_Waters | Intersects outstanding resource waters | MassGIS 2010 Outstanding Resource Waters data layer |
| Mass_Econ | Intersects with Mass. Alliance for Econ. | MassEcon 2011 Market Ready Sites |

| Criterion | Description | Source |
|---|---|---|
| | Devel. (MassEcon) Market Ready Site | geographic data |
| Roads1 | Located within 1/4 mile of Interstate exit | MassDOT 2009 Roads data layer |
| Roads2 | Located within 1/8 mile of major roads class = 2 (Multi-lane roadway, not limited access) | MassDOT 2009 Roads data layer |
| Roads3 | Located within 1/8 mile of major roads class = 3 (Other numbered route) | MassDOT 2009 Roads data layer |
| Roads4 | Located within 1/8 mile of major roads class = 4 (Major road - arterials and collectors) | MassDOT 2009 Roads data layer |
| Imp_Stream | Intersects with hydrologic unit containing >50% impaired streams (based on USGS report) | Based on Data from 2009 "USGS Indicators of Stream flow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins" report |

## Appendix F: Regionally Significant Priority Areas

### Regionally Significant Priority Development Areas

| Priority Development Area Name/Description | Town | ID |
|---|---|---|
| Barre Common (North, Middle and South) | BARRE | 21-1 |
| South Barre Mill Village & Barre Plain Com. Ind. Areas | BARRE | 21-2 |
| Route 32 Route 122 Business Commercial Area | BARRE | 21-5 |
| Route 9/Central St. business area (including Gavett Bldg) | BROOKFIELD | 45-3 |
| Finney's - Brownfield site | BROOKFIELD | 45-4 |
| Area on Route 9 from Town line to Quabaog St. | BROOKFIELD | 45-7 |
| River Frontage (including Spencer Plating 72 Mill St. and Whites Landing 6 Fiskdale Rd, landings, bo | BROOKFIELD | 45-5 |
| Depot Square including site of former Railroad Station, Veterans Park, Old Town Offices/Keith Block, | EAST BROOKFIELD | 84-2 |
| Town Complex | EAST BROOKFIELD | 84-5 |
| Route 49 Commercial Area | EAST BROOKFIELD | 84-3 |
| Hardwick Common and Village Historic District | HARDWICK | 124-4 |
| Hardwick Knitters Mill | HARDWICK | 124-1 |
| Commercial District | HARDWICK | 124-9 |
| Mill Overlay District (includes all 3 mills) | HARDWICK | 124-5 |

| Priority Development Area Name/Description | Town | ID |
|---|---|---|
| Downtown Central Business | NORTH BROOKFIELD | 212-10 |
| North Brookfield Business Center | NORTH BROOKFIELD | 212-5 |
| Prospect and Winter Street Industrial District | NORTH BROOKFIELD | 212-1 |
| Worcester Road Business District | PRINCETON | 241-1 |
| Rutland Center | RUTLAND | 257-2 |
| Rutland Plaza | RUTLAND | 257-5 |
| Former Rutland Heights Hospital Site | RUTLAND | 257-1 |
| Route 56 business area | RUTLAND | 257-7 |
| Former Town Hall in Center Village | WARREN | 311-7 |
| Warren Center Village | WARREN | 311-1 |
| Wrights Mill Area | WARREN | 311-3 |
| West Warren Village | WARREN | 311-2 |
| Land near Mass Pike in West Warren/Gilbert Road Area | WARREN | 311-4 |
| Warren Pumps | WARREN | 311-5 |
| West Brookfield Center Historic District/Town Common | WEST BROOKFIELD | 323-1 |

## Regionally Significant Priority Preservation Areas

| Priority Preservation Area Name/Description | Town | ID |
|---|---|---|
| Prince River Corridor | BARRE | 21-12 |
| Felton Field | BARRE | 21-11 |
| Barre Landfill (Adjacent to National Grid in Oakham) | BARRE | 21-8 |
| International Snowmobile Trail/Ware River Rail Trail | BARRE | 21-20 |
| Moose Brook Core Habitat | BARRE | 21-18 |
| Morrisette Farm | BARRE | 21-16 |
| Millers Beach | BARRE | 21-15 |
| Overlook Farm | BROOKFIELD | 45-12 |
| Richardson Farm | BROOKFIELD | 45-13 |
| Jeppson Farm | BROOKFIELD | 45-14 |
| Historic Trail passes through Devil's Elbow | BROOKFIELD | 45-10 |
| Bannister /Brookfield Town Common Historic District | BROOKFIELD | 45-11 |
| Elm Hill Farm Complex | BROOKFIELD | 45-9 |
| Water Well Protection Areas | EAST BROOKFIELD | 84-7 |
| Water Resources including Lake Lashaway, Quaboag and Quacumquasit Ponds, East Brookfield River | EAST BROOKFIELD | 84-8 |
| Grey Ledge and High Rocks area | EAST BROOKFIELD | 84-6 |
| Moose Brook Corridor | HARDWICK | 124-11 |
| Muddy Brook and Hardwick Pond | HARDWICK | 124-16 |
| Gate 43 to the Quabbin Reservoir | HARDWICK | 124-14 |
| Dougal Range | HARDWICK | 124-10 |

| Priority Preservation Area Name/Description | Town | ID |
|---|---|---|
| Slab City | HARDWICK | 124-13 |
| Ware/Winimusset Valley Aquifer | NEW BRAINTREE | 202-10 |
| Core Habitat | NEW BRAINTREE | 202-11 |
| Barn on Fish and Wildlife Land | NEW BRAINTREE | 202-6 |
| Brooks Pond and surrounding aquifer | NEW BRAINTREE | 202-8 |
| Camp Putnam | NEW BRAINTREE | 202-9 |
| Wheeler's Surprise (historic) | NEW BRAINTREE | 202-5 |
| Cusky Pond | NEW BRAINTREE | 202-4 |
| Howe Rd. Core Habitat | NORTH BROOKFIELD | 212-22 |
| 5 mile River and Brooks Pond | NORTH BROOKFIELD | 212-14 |
| Coys Brook Corridor including Bennett Farm | NORTH BROOKFIELD | 212-12 |
| Barnett Rd. Core Habitat | NORTH BROOKFIELD | 212-21 |
| Horse Pond and Doane Pond | NORTH BROOKFIELD | 212-16 |
| New Braintree Rd. Core Habitat | NORTH BROOKFIELD | 212-20 |
| Oakham Rd. Core Habitat | NORTH BROOKFIELD | 212-19 |
| Town Forest | NORTH BROOKFIELD | 212-15 |
| Bates Observatory | NORTH BROOKFIELD | 212-13 |
| Lake Lashaway | NORTH BROOKFIELD | 212-17 |
| Bates Street Farm Area | NORTH BROOKFIELD | 212-11 |
| Perry Pond | NORTH BROOKFIELD | 212-18 |
| Mill Rd. /Sucker Brook Core Habitat | NORTH BROOKFIELD | 212-23 |
| Unprotected biohabit areas | OAKHAM | 222-11 |

| Priority Preservation Area Name/Description | Town | ID |
|---|---|---|
| Rare Species Habitat nw of North Brookfield Road & south of New Braintree Road | OAKHAM | 222-5 |
| Watershed Protection | OAKHAM | 222-7 |
| Cold Brook Springs Railroad Depot Site | OAKHAM | 222-2 |
| Oakham Town Common | OAKHAM | 222-3 |
| Cistercian Abbey | OAKHAM | 222-8 |
| Adams's Pond | OAKHAM | 222-10 |
| National Grid Land (Adjacent to Barre Landfill) | OAKHAM | 222-12 |
| Crocker Nye Spring | OAKHAM | 222-6 |
| Water Resources (Paradise Pond, Wachusett Lake, Bickford Pond, Glutner Pond, Crow Hills Pond, Quinapoxet Reservoir, Snow Pond) | PRINCETON | 241-8 |
| Biomap 2 | PRINCETON | 241-13 |
| Unprotected Ridgelines | PRINCETON | 241-14 |
| Former Gates Property | PRINCETON | 241-15 |
| Mechanics Hall | PRINCETON | 241-5 |
| Smith Farm | PRINCETON | 241-12 |
| Halls Farm | PRINCETON | 241-11 |
| Princeton Town Center (Including Bagg Hall & Public Library) | PRINCETON | 241-9 |
| Boylston Park | PRINCETON | 241-10 |
| Superintendent's House | PRINCETON | 241-6 |
| Quinapoxet Reservoir  Watershed Farmland | RUTLAND | 257-11 |
| Pine Hill Watershed Farmland | RUTLAND | 257-10 |

| Priority Preservation Area Name/Description | Town | ID |
|---|---|---|
| Muschopauge Pond | RUTLAND | 257-13 |
| Glenwood-Route 122A Farmland OS | RUTLAND | 257-8 |
| Treasure Valley | RUTLAND | 257-12 |
| Devil's Peak | WARREN | 311-11 |
| Lucy Stone Park | WARREN | 311-15 |
| Comins Pond | WARREN | 311-8 |
| Shepherd's Farm | WARREN | 311-14 |
| Coy Hill | WARREN | 311-12 |
| Mark's Mountain | WARREN | 311-13 |
| Wickaboag Pond & its tributaries (Sucker Brook & Mill Brook) | WEST BROOKFIELD | 323-10 |
| Quaboag Plantation Settlement | WEST BROOKFIELD | 323-8 |
| Grist Mill Sites - Tyler Saw, Gilbert Saw, Pynchon | WEST BROOKFIELD | 323-7 |
| Unprotected parts of Coy Hill | WEST BROOKFIELD | 323-12 |
| Quaboag River Greenway and Water Trail (including mill sites and dams) | BROOKFIELD<br>WARREN<br>WEST BROOKFIELD | 45-8<br>311-9<br>323-11 |
| Ware River Corridor (improved access and dam usage) | BARRE<br>HARDWICK<br>NEW BRAINTREE | 21-17<br>124-15<br>202-7 |
| Old Bay Path Indian Trail | WARREN<br>WEST BROOKFIELD | 311-10<br>323-9 |
| Mid State Trail | BARRE<br>OAKHAM<br>PRINCETON | 21-14<br>222-4<br>241-7 |
| Mass Central Rail Trail | BARRE<br>HARDWICK<br>NEW BRAINTREE<br>OAKHAM<br>RUTLAND | 257-G<br>124-G<br>202-H<br>222-B<br>257-G |
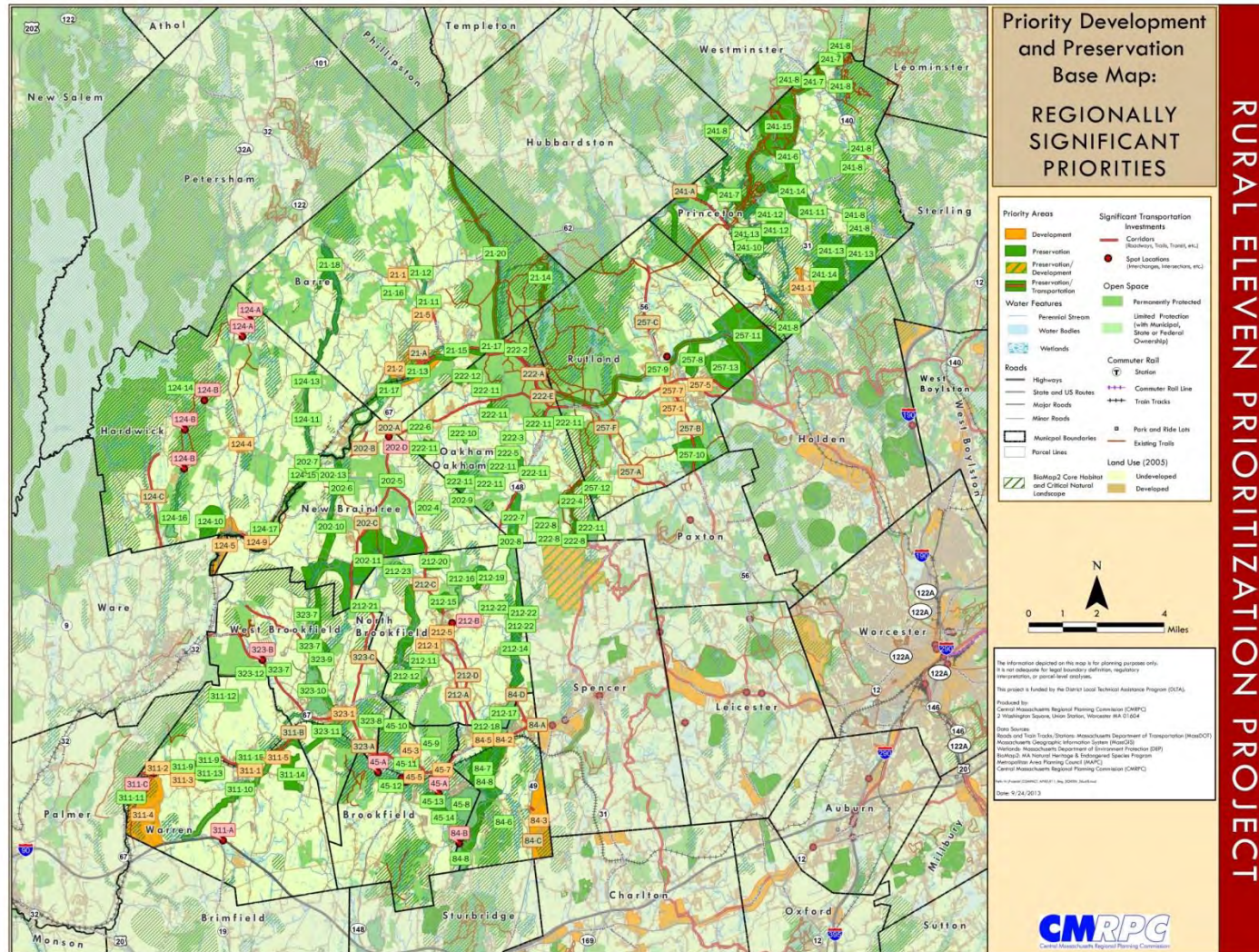
## Appendix G:  Municipal plans reviewed by CMRPC staff

### Local Plans reviewed

#### Barre:
2003 Town of Barre Community Development Plan, Barre Community Development Committee with CMRPC and the Massachusetts Watershed Coalition;
2008 Barre Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008.
http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/barre.pdf
2010 Barre Open Space and Recreation Plan, Barre Open Space and Recreation Plan Committee with CMRPC.

#### Brookfield:
2008 Brookfield Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008. http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/brookfield.pdf
2010 Brookfield Open Space and Recreation Plan, Brookfield Master Plan And Open Space and Recreation Plan Committee with CMRPC.
2011 Brookfield Master Plan, Brookfield Master Plan Committee.
http://www.brookfieldma.us/Documents_List.php?doctype=Master%20Plan%202011

#### East Brookfield:
2006 East Brookfield Open Space and Recreation Plan, East Brookfield Master Plan Committee with assistance from CMRPC. http://www.eastbrookfieldma.us/News-Announcements/Master%20Plan/2006%20Open%20Space%20and%20Recreation%20Plan.pdf
2008 East Brookfield Community Master Plan, East Brookfield Master Plan Committee with assistance from CMRPC.
2008 East Brookfield Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008. http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/ebrookfield.pdf

## Hardwick:

1997 Hardwick Open Space and Recreation Plan, Hardwick Open Space Committee

2004 Hardwick Community Development Plan, CMRPC

2008 Hardwick Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008. http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/hardwick.pdf

2013 Hardwick Open Space and Recreation Plan, DRAFT, Hardwick Master Plan Committee

## New Braintree:

2005 New Braintree Open Space and Recreation Plan, New Braintree Open Space Planning Committee and Massachusetts Watershed Coalition.

## North Brookfield:

2007 North Brookfield Community Master Plan, North Brookfield Master Plan Committee with CMRPC.

2007 North Brookfield Open Space and Recreation Plan, North Brookfield Master Plan Committee with CMRPC.

2008 North Brookfield Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008. http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/nbrookfield.pdf

## Oakham:

2008 Open Space and Recreation Plan; Oakham Open Space and Recreation Plan Committee with East Quabbin Land Trust

## Princeton:

2000 Princeton Open Space and Recreation Plan; Princeton Open Space Committee

2007 Princeton Town Plan, Princeton Master Plan Steering Committee with Community Opportunities Group, Inc.

2006 Princeton Reconnaissance Report, Freedom's Way Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With Freedom's Way Heritage Association, 2006. http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/princeton-with-map.pdf

2012 Worcester Road (Princeton) Village District Visioning, CMRPC, April 27, 2012
2012 Open Space and Recreation Plan Update, Princeton Open Space Committee


## Rutland:
2000 Town of Rutland Massachusetts Master Plan for the Future, Rutland By-Law Subcommittee and the residents of Rutland with Beals and Thomas Inc.
2004 Town of Rutland Open Space and Recreation Plan, Rutland Conservation Commission and Open Space Committee with Worcester County Conservation District and Massachusetts Watershed Coalition
2011 Town of Rutland Open Space and Recreation Plan DRAFT, Rutland Conservation Commission and Open Space Committee with Shriver Consulting and Massachusetts Watershed Coalition


## Warren:
2006 Town of Warren Master Plan, Town of Warren Master Plan Committee with University of Massachusetts Amherst Project Team
2006 Town of Warren Open Space and Recreation Plan
2008 Warren Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008.
http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/warren.pdf


## West Brookfield:
2004 West Brookfield Community Development Plan, West Brookfield Community Development Committee and the Massachusetts Watershed Coalition
2008 West Brookfield Reconnaissance Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008. http://www.mass.gov/eea/docs/dcr/stewardship/histland/recon-reports/wbrookfield.pdf
2011, Town of West Brookfield Open Space and Recreation Plan, Open Space and Recreation Plan Steering Committee


## Regional and Statewide Plans Reviewed:

2020 Growth Strategy for Central Massachusetts, The Development Framework, CMRPC, February 2000
2020 Growth Strategy for Central Massachusetts - An Update, CMRPC, December 2004
Reconnaissance Phase Final Report, Upper Quaboag Watershed And North Quabbin Region Landscape Inventory, Massachusetts Heritage Landscape Inventory Program, Department Of Conservation and

Recreation (DCR) With CMRPC and North Quabbin Regional Landscape Partnership, 2008. http://www.eastbrookfieldma.us/News-Announcements/Heritage%20Lanscape%20Inventory/Regional-Report.pdf

**Lost Villages Scenic Byway (Route 122 Paxton to Petersham) Corridor Management Plan (without maps), CMRPC, June 2009**

**CMRPC Regional Bicycle & Pedestrian Plan - 2011**

2011 Worcester Regional Mobility Study; http://www.cmrpc.org/worcester-regional-mobility-study
2012 Greater Worcester Area Comprehensive Economic Development Strategy, CMRPC
2012 Regional Transportation Plan, Central Massachusetts Regional Planning Commission (CMRPC) and the Central Massachusetts Metropolitan Planning Organization (CMMPO), Worcester, Massachusetts, August, 2011 http://www.cmrpc.org/2012-regional-transportation-plan

## Other references

Connington, Helen, History of Barre: Windows into the Past, Barre, Massachusetts, 1992.

The Commonwealth of Massachusetts, Special Commission on Rural Access and Improving State-Sponsored Services in Massachusetts Rural Communities, Report to the Great and General Court and the Executive Office of the Governor, Executive Office of Health and Human Services, Rural Access Commission, August, 2013. http://www.mass.gov/eohhs/docs/eohhs/rural-services-commission-report.pdf

## Appendix H  - Resources

### 495 Compact Tool Kit

As part of the I-495 MetroWest Development Compact project, Mass Audubon developed a toolkit to assist in the implementation of the Compact. The toolkit provides access to sources of funding and technical assistance, model zoning bylaws and other land use techniques, informative studies and data sources. The toolkit content is organized by:

- Priority Development Areas (PDAs): Techniques and resources for achieving appropriate uses and site design in the PDAs.
- Priority Preservation Areas: Tools for the protection of land, water, and other natural resources, with a focus on fiscally efficient methods to achieve preservation goals.
- Regionally Significant Transportation Improvements: Strategies for the development of an enhanced, upgraded, and more sustainable transportation system for the 495 Compact Region.
- Water Resource Protection and Infrastructure: Resources and information for protecting water quality and meeting water needs of residents, industry and natural systems.
- Clean Energy and Climate Change:  Information on coordinating land use and transportation consistent with the principles of limiting and reducing greenhouse gas emissions established by the Global Warming Solutions Act and the transportation reorganization statute.

We note the availability of the toolkit because it is directly applicable to the Rural-11 Prioritization Project as well.  The toolkit is designed to support the work that is necessary to address the findings of this study, and to assist communities, residents, businesses, nonprofits and others in undertaking effective implementation actions.  The 495 Compact Toolkit is an online resource that can be updated as new practices and techniques become available.  The toolkit is available online through Mass Audubon (www.massaudubon.org/shapingthefuture), as well as on the EOHED website (www.mass.gov/mpro) project website (http://www.495partnership.org/compact).

## Appendix I - Acknowledgements and Project Participants

The Rural – 11 project attracted a wide range and large number of participants, some of who only came to a single meeting while others contributed a significant amount of their time to the project.  While agency staff took great care to assemble lists of project participants by using sign-in sheets and other methods, there will undoubtedly be people who were missed.  We regret not being able to acknowledge everyone individually but extend a collective thank you to all who participated, in small or large measure.

### Acknowledgements

- **Residents, community leaders, boards of selectmen, planning boards, agricultural commissions, and others from the Rural-11 Region gave generously with their time attending meetings and providing valuable input.** (See below for a list of participants taken from meeting sign-in sheets).

- **Federal and state officials, state legislators, non-profit professionals, and private individuals and organizations provided additional guidance.**
  - State Representative  Anne Gobi and State Senator Stephen Brewer
  - Mass Audubon Society.
  - Executive Office of Housing and Community Development;
  - Executive Office of Energy and Environmental Affairs;
  - Massachusetts Department of Agricultural Resources;
  - East Quabbin Land Trust;
  - Mass Broadband Institute;
  - MDP Development, LLC;
  - Bill Scanlan; Consultant
  - United States Department of Agriculture Farm Services.

- **Central Massachusetts Regional Planning Commission**
  - Physical Development Committee – Timothy Wheeler, Robert Hassinger, Otto Lies, Kathleen Keohane, Chris Baehrecke, Peter Krawczyk, Bill Linnane, Arnold Lanni.
  - Staff  - Lawrence B. Adams; Janet Pierce; Christopher Ryan, AICP;  Vera Kolias, AICP; Trish Settles, AICP; Mary Ellen Blunt; Rich Rydant; Sujatha Mohanakrishnan; Matthew Franz; Dianna Provencher; Ryan Lundergan; Derrick Mathieu

### PHOTOS
Unless otherwise noted photos were taken by Janet Pierce, Trish Settles, or other CMRPC Staff.

## Project Participants

Below is a list of individuals and organizations who signed in at public forums, committee meetings, and round table events, or otherwise assisted with the research, production or completion of this project.. We apologize for any inadvertent omissions.  We appreciate the tremendous amount of community involvement in this project.

**Individuals**

| First | Last | Affiliation |
|---|---|---|
| Larry | Adams | CMRPC |
| Robert | Barnes | Brookfield |
| Donna | Baron | Mass Broadband Initiative |
| Johanna | Swain | West Brookfield |
| Chris | Baehrecke | Paxton, CMRPC Physical Development Cmte |
| Mary Ellen | Blunt | CMRPC |
| Stephen | Brewer | MA Senate |
| Terry | Briggs | Hardwick |
| Andrea | Buglione | Mount Grace Land Conservation Trust |
| Caren | Caljoun | Oakham |
| Joe | Chenevert | New Braintree |
| Lucinda | Childs | Hardwick |
| John | Clarkeson | EOEEA |
| Jane | Cronin | New Braintree |
| Sheila | Cuddy | QVCDC |
| Carol | Cutrumbes | North Brookfield |
| Paul | Dell'Aquilla | Mass Audubon Society |
| Catherine | DeRonde | MDAR |
| Jim | Dolan | Brookfield |
| Janet | Dolan | Brookfield |
| David | Dore | Spencer New Leader |
| Burt | DuVernay | New Braintree |
| Wes | Dwelly | Oakham |
| Jennifer | Falardeau | North Brookfield |
| Dane | Falardeau | North Brookfield |
| A | Farmer | Oakham |
| Erik | Fleming | Hardwick |
| Matt | Franz | CMRPC |
| Kurt | Gaertner | EOEEA |
| Anne | Gobi | MA House of Representative |

**Individuals**

| First | Last | Affiliation |
|---|---|---|
| John | Goodrich | MA office of Public Collaboration |
| Kip | Graham | USDA |
| Barbara | Haberlin | Brookfield |
| Judith | Haran | Holden |
| Peter | Hartman | Barre |
| Lynn | Hartman | Barre |
| Robert | Hassinger | CMRPC Physical Development Cmte |
| Rudy | Heller | Brookfield |
| Dake | Henderson | MDAR |
| Cynthia | Henshaw | East Quabbin Land Trust |
| Ann | Hicks | North Brookfield |
| Bill | Howland | New Braintree |
| Jeff | Howland | New Braintree |
| Ross | Hubacz | North Brookfield |
| Phil | Hubbard | Barre |
| Robert | Hunt | New Braintree |
| Mick | Huppert | Petersham |
| Becky | Ikehara | North Brookfield |
| Kathy | Inman | Barre |
| Mike | Jaquith | East Brookfield |
| Jeff | Keay | Wachusett Greenway |
| John | Kennison | New Braintree |
| Kathleen | Keohane | Shrewsbury, CMRPC Physical Development Cmte |
| Bill | King | North Brookfield |
| Martha | Klamans | East Quabbin Land Trust |
| Vera | Kolias | CMRPC |
| Peter | Krawczyk | Warren, CMRPC Physical Development Cmte |
| Jeff | Lacy | DCR |
| Arnold | Lanni | Southbridge, CMRPC Physical Development Cmte |
| Anne Renee | Larouche | Hampshire COG |
| Rick | LeBlanc | MDAR |
| Rodman | Leehy | Hardwick |
| Linda | Leehy | Hardwick-EQLT |
| Charles | LeMaitre | Hardwick |
| Heather | Lemieux | Barre |
| Peter | Lesky | Rutland |
| Bill | Linnane | Westborough, CMRPC Physical Development Cmte |

**Individuals**

| First | Last | Affiliation |
|---|---|---|
| Otto | Lies | Holden, CMRPC Physical Development Cmte |
| Ryan | Lundergan | CMRPC |
| Victoria | Maguire | EOHED |
| Tony | Marcotte | MDP Development |
| Derrick | Mathieu | CMRPC |
| Michel | Merle | Barre |
| Leslie | Miller | New Braintree |
| Deb | Miner | New Braintree |
| Bob | Mitchell | UMass Amherst |
| Alan | Molin | Hardwick |
| Diane | Molin | Hardwick |
| Joan | Morelli | Old Hickory Farm |
| Sal | Morelli | Old Hickory Farm |
| Sue | Morello | Barre |
| Kate | Morreale | Hardwick |
| Tim | Morrell | West Brookfield |
| Bill | Mucha | Oakham |
| Jackie | Murphy | |
| Victor | Negrete | EOHED |
| Donna | Neylon | Brookfield |
| Jackie | O'Brien | Rutland |
| Bob | O'Connor | EOEEA |
| Michele | Padula | MDAR |
| Sherry | Patch | Hardwick |
| Laura | Pease | Regional Animal Control |
| Diane | Peterson | Oakham |
| Dave | Petrovick | Barre |
| Janet | Pierce | CMRPC |
| Brian | Pierce | New Braintree |
| Jamie | Pottern | Mount Grace Land Conservation Trust |
| Dianna | Provencher | Leicester |
| Heidi | Ricci | Mass Audubon Society |
| Ginny | Rich | Barre, EQLT |
| Don | Rich | Barre, Upper Ware River Watershed |
| Don | Roberts | Brookfield |
| Bethany | Roberts | Brookfield |
| Donald | Roberts | Hardwick |

**Individuals**

| First | Last | Affiliation |
|---|---|---|
| Paula | Roberts | Hardwick |
| Pamela | Robinson | Hardwick |
| Raymond | Robinson | Hardwick |
| Paul | Rochette | Oakham |
| Susan | Rutherford | Quaboag Valley  CDC |
| Chris | Ryan | CMRPC |
| Rich | Rydant | CMRPC |
| Bill | Scanlan | Warren |
| Trish | Settles | CMRPC |
| Gregg | Sinner | North Brookfield |
| Connie | Small | New Braintree |
| Clarence | Snyder | Brookfield |
| Eliot | Starbard | Oakham |
| Phil | Stevens | Barre |
| Genevieve | Stillman | Hardwick |
| Donald | Taft | Brookfield |
| Nick | Thomo | Brookfield |
| Lucinda | Thompson | Brookfield |
| Katie | Tyler | New Braintree |
| Mark | Violette | East Brookfield |
| Erik | Volheim | Hardwick |
| Joan | Walker | New Braintree |
| Randy | Walker | New Braintree |
| Mary | Walter | North Brookfield |
| Phillip | Warbasse | Oakham |
| Greg | Watson | MDAR |
| Harry | Webb | Hardwick |
| Tim | Wheeler | Berlin |
| Stan | White | Hardwick |
| Dick | Williams | Rutland |
| A | Woman | |
| B | Woman | |
| Ed | Yaglou | Barre |
| Bill | Zinni | Hardwick |

**Public Bodies**

Barre Board of Selectmen

Barre Planning Board

Brookfield Planning Board

East Brookfield Board of Selectmen

East Brookfield Planning Board

Hardwick Planning Board

Holden Agricultural Commission

New Braintree Board of Selectmen

North Brookfield Board of Selectmen

North Brookfield Planning Board

Oakham Board of Selectmen

Princeton Planning Board

Rutland Planning Board

Warren Planning Board

West Brookfield Board of Selectmen

**Other Stakeholders**

| | |
|---|---|
| Carter Stevens Farm | Barre |
| Hartman's  Herb Farm | Barre |
| Hayfield Farm | Brookfield |
| Lamoureux Greenhouses | Brookfield |
| Overlook Farm | Brookfield |
| Kings Berry Farm | East Brookfield |
| Hardwick Farmer's Coop | Hardwick |
| Molin Farm | Hardwick |
| Robinson's Farm | Hardwick |
| Howe's Farm and Garden | New Braintree |
| Grand Maple Farms | New Braintree |
| Walker Farm at Whortleberry Hill | New Braintree |
| Kip's Christmas Tree Farm | New Braintree |
| Ken's Sugar House | New Braintree |
| Pollard's Ashland Farm | New Braintree |
| Mcintyre  Farms | North Brookfield |
| Brookfield Orchards | North Brookfield |
| Pinebrook Farm | Oakham |
| Flo's Country Farm Stand | Rutland |

**Other Stakeholders**

| | |
|---|---|
| Prouty Farm | Rutland |
| Ketonen-Clark Farms | Rutland |
| Heifer International | Rutland |
| Klem's Tractor | Spencer |
| Breezeland Orchards | Warren |
| Old Cider Mill Farm | West Brookfield |
| Ragged Hill Orchards | West Brookfield |

Thank you for your contributions.